Broadband Business Case Analysis (BCA) Round 2 Report

For

By Mark Goldstein

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http://www.researchedge.com/

June 30, 2014 (Version V01F)

WACOG Broadband BCA Round 2
Regional Focus Areas Report

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WACOG Broadband BCA Round 2

Regional Focus Areas Report

Executive Summary

WACOG Broadband Project Round 2 Regional Focus Areas:

High speed Internet is the new essential infrastructure for this century's job creation, educational and healthcare transformation, and economic development, just as highways, railroads, canals, electricity, and telephone were for previous generations. It is the 21st century's infrastructure challenge and it is becoming ever more critical that **Western Arizona Council of Governments (WACOG - http://www.wacog.com/)** communities have adequate bandwidth to help our local economies, create jobs, and improve education, healthcare, public safety, and quality of life.

Last year saw the formation of a **WACOG Broadband Steering Committee (http://www.wacog.com/broadband.html)** and this year its continuation with broad participation among regional economic development, educational technology, transportation, government IT, healthcare, and public safety stakeholders. The Committee and its activities are being funded, in part, by a federal broadband grant administered through the **State of Arizona's Digital Arizona Program (DAP - http://azbroadband.gov/).**

WACOG has been applying these funds to help advance broadband assessment, gap analysis, strategy, tactics, and application adoption in our region, Yuma, La Paz, and Mohave counties. **International Research Center (IRC - http://www.researchedge.com/)** has continued consulting under the grant, facilitating the WACOG Broadband Steering Committee, collecting and analyzing regional broadband and economic data, producing a series of reports for Round 1 and Round 2 phases, and otherwise assisting with this project.

In Round 2 the WACOG Broadband Steering Committee and International Research Center continued outreach to assess and improve broadband availability and adoption, with planning and capacity building focusing on the following four WACOG regions:

- Region 1 - City of San Luis & Port of Entry (Yuma County)
- Region 2 - Yuma Area Aviation (Yuma International Airport, Marine Corps Air Station, U.S. Army Yuma Proving Ground, Southwest Arizona UAS Test Range Overlay)
- Region 3 - Town of Parker & La Paz County
- Region 4 - Kingman Airport Industrial Park & I-40 Industrial Corridor (Mohave County)

Highlights follow for the overall project and each of the four targeted regions including activities in further determination of broadband issues, strategic plans and actions, as well as developing opportunities. IRC would like to acknowledge the strong participation and support throughout by the entire ASET team, WACOG especially Brian Babiars, Executive Director and Andrew C. Phelan III, Finance Director, Brad Zerbe, ASET/ATII Project Consultant, B2G Solutions, the Arizona Telecommunications & Information Institute (http://aztii.org/), and Oris Friesen, Senior Project Consultant, International Research Center.

WACOG Broadband Community Planning Round 2 General Activities:

The **WACOG Broadband Steering Committee** continued to periodically meet via teleconference with representatives from regional economic development, educational technology, transportation, government IT, healthcare, and public safety stakeholders. Dropbox folder utilized for Committee document sharing including draft and final reports, meeting minutes, and other announcements and reference materials.

WACOG in conjunction with the **Arizona Telecommunications & Information Council (ATIC - http://arizonatele.com/)** held the **ATIC WACOG Rural Broadband Summit** on March 6, 2014 from 11:00 AM to 2:30 PM at the Yuma Public Library and the WACOG Kingman Office, with remote desktop viewers from around the region and the State. There were approximately 30 onsite attendees and another 30 remotely. The program included USDA Rural Development and focus on education, telehealth, and public safety broadband application areas.

The WACOG Broadband Steering Committee and IRC worked to identify and engage subsets of stakeholders for each of the 4 focus regions for Round 2 activities. IRC continued to develop and update a WACOG Broadband Round 2 playbook with sub-region overviews, broadband infrastructure analysis, strategic considerations, and resources that has evolved into this current Round 2 Report. The updated WACOG Broadband Coverage Report for Spring 2014 was distributed and socialized including detailed statistics as well as mapping and gap analysis by county and major population centers.

IRC surveyed WACOG Broadband Steering Committee members as to broadband providers they had been dealing with and issues/progress to date. The State broadband map was used to extract lists of pertinent broadband providers for each target region and appropriate individuals and contact vectors collected and developed. IRC then drove broadband provider outreach and engagement relative to developmental plans and community needs awareness, as well as in-depth policy and strategic discussions with WACOG stakeholders.

City of San Luis & Port of Entry Focus Area:

The City of San Luis and associated Port of Entry (POE) in Yuma County are the “hot zone” for WACOG border activity and a major hub for international transportation and logistics as well as manufacturing.

- There remains limited DSL and Cable Modem broadband coverage and delivery speeds. Community and stakeholders need to demonstrate aggregate demand and future growth to existing broadband providers seeking further investment over time.
- Significant rework and redesign of the streets serving the primary and secondary POE facilities is underway with broadband provider cooperation in utility relocation and new deployment opportunities.
- Several new industrial parks are planned and logistic facilities as well as manufacturing and service businesses should see strong growth. Real estate developers are actively engaged in dialogue with City economic development staff and to some extent broadband providers in their planning for new industrial parks.
- CenturyLink and TW Cable are making strategic investments in incremental fiber and service offerings. TDS Telecom is expanding DSL service availability in the area under FCC CAF Round 2 funding.

- GovNet will bring higher level services to a good number of institutions in the education, healthcare, and government arenas as its deployment matures. However this remains an intermediate step due to limited carrying capacities.

Yuma Area Aviation Focus Area:

The Yuma Area Aviation includes multiple public and military facilities including the Yuma International Airport, Marine Corps Air Station (MCAS), U.S. Army Yuma Proving Ground (YPG), and proposed Southwest Arizona Unmanned Aerial Systems (UAS) Test Range Overlay. This supports the general aviation needs for the Yuma area as well as a significant and growing military and aerospace & defense industry presence.

- Arizona was not selected as one of six federal Aircraft Systems (UAS) test centers which would have included the Southwest Arizona UAS Test Range in the Yuma area. Nonetheless, regional military and aerospace & defense industry is seeing strong growth with national and international companies establishing and/or growing their presence at the Yuma County Airport and surrounding areas, as well as co-located at military bases where appropriate. Broadband access to existing and planned office and industrial facilities has become a critical economic development requirement.
- There remains limited DSL and Cable Modem broadband coverage and delivery speeds. Community and stakeholders need to demonstrate aggregate demand and future growth to existing broadband providers seeking further investment over time.
- CenturyLink and TW Cable are making strategic investments in incremental fiber and service offerings. TDS Telecom is expanding DSL service availability in the area under FCC CAF Round 2 funding. Good dialogue has been ongoing between economic development stakeholders and selective broadband providers which should be pursued and leveraged going forward.
- GovNet will bring higher level services to a good number of institutions in the education, healthcare, and government arenas as its deployment matures. However this remains an intermediate step due to limited carrying capacities.
- There is community interest in a possible open wireless project where a public network is established over meshed network elements. Primarily, Wi-Fi access points would be securely shared by existing broadband customers (residential, businesses, anchor institutions) with public users and wireless bridges or other connectivity employed to bridge Wi-Fi clusters if and where needed.

Town of Parker & La Paz County Focus Area:

The Town of Parker, county seat of La Paz County and the County itself are extremely underserved (very limited if any DSL, cable or fixed wireless broadband for example) and thus a good target and a prime example of underserved population centers to develop strategy and tactics about.

- La Paz County represents by far the area with the most severe broadband deficit in Arizona and represents one of the most underserved regions of the nation. The State submitted a recent formal expression of interest in participating in the Rural Broadband Trials under the Connect America Fund (CAF) including a project in La Paz County implementing the Digital Arizona Tactical Model utilizing highway ROW fiber, towers, and high capacity point-to-point and point-to-multipoint wireless to connect key community anchor points. This path should be a prime focus and pursuit for accelerating regional broadband availability and capabilities.

- There remains limited DSL and Cable Modem broadband coverage and delivery speeds. Community and stakeholders need to demonstrate aggregate demand and future growth to existing broadband providers seeking further investment over time.
- Frontier especially is making strategic investments in incremental fiber and DSL as well as Ethernet service offerings. Good dialogue has been ongoing between economic development stakeholders and selective broadband providers which should be pursued and leveraged going forward.
- GovNet will bring higher level services to a good number of institutions in the education, healthcare, and government arenas as its deployment matures. This will represent the available bandwidth of first and last resort for many of the isolated Community Anchor Institutions and thus a great improvement in availability, but remains an intermediate step due to limited carrying capacities.
- There is community interest in a possible open wireless project where a public network is established over meshed network elements. Primarily, Wi-Fi access points would be securely shared by existing broadband customers (residential, businesses, anchor institutions) with public users and wireless bridges or other connectivity employed to bridge Wi-Fi clusters if and where needed.
- Municipal and county government agencies should cooperate in reviewing and where possible streamlining permitting and ROW access, as well as wireless asset siting following available models and best practices for possible adoption.

Kingman Airport & Industrial Corridor Focus Area:

Kingman Airport Industrial Park & I-40 Industrial Corridor in Mohave County are important logistic centers and transportation routes along the Canamex Corridor, reflecting potential broadband needs and opportunities for today's environment and relative to the pending major I-11 highway infrastructure investments.

- There is generally good DSL and Cable Modem broadband coverage and delivery speeds in the Kingman area. Community and stakeholders may still need to demonstrate aggregate demand and future growth to existing broadband providers seeking further investment over time.
- Kingman Airport & Industrial Park is served by several providers and reasonably high capacity broadband is readily obtainable by building owners and tenants.
- The Arizona and Nevada Departments of Transportation are working on the I-11 Corridor Study for a possible high priority interstate link between Phoenix and Las Vegas. Such major new road construction along a primary transportation corridor offers a unique opportunity for significant fiber and vertical asset infrastructure. ADOT should be encouraged to plan for broadband partnering and industry brought to the table for information and project development as the I-11 moves to implementation.
- CenturyLink and Suddenlink (formerly NPG) are making strategic investments in incremental fiber and service offerings. TDS Telecom is expanding DSL service availability in the area under FCC CAF Round 2 funding.
- GovNet will bring alternative high level services to a fair number of institutions in the education, healthcare, and government arenas as its deployment matures. However this remains an intermediate step due to limited carrying capacities.

WACOG Broadband BCA Round 2

City of San Luis & Port of Entry Focus Area (Region 1)

City of San Luis & Port of Entry Focus Areas:

The City of San Luis and associated Port of Entry (POE) in Yuma County are the “hot zone” for WACOG border activity and a major hub for international transportation and logistics as well as manufacturing.

- There remains limited DSL and Cable Modem broadband coverage and delivery speeds. Community and stakeholders need to demonstrate aggregate demand and future growth to existing broadband providers seeking further investment over time.
- Significant rework and redesign of the streets serving the primary and secondary POE facilities is underway with broadband provider cooperation in utility relocation and new deployment opportunities.
- Several new industrial parks are planned and logistic facilities as well as manufacturing and service businesses should see strong growth. Real estate developers are actively engaged in dialogue with City economic development staff and to some extent broadband providers in their planning for new industrial parks.
- CenturyLink and TW Cable are making strategic investments in incremental fiber and service offerings. TDS Telecom is expanding DSL service availability in the area under FCC CAF Round 2 funding.
- GovNet will bring higher level services to a good number of institutions in the education, healthcare, and government arenas as its deployment matures. However this remains an intermediate step due to limited carrying capacities.

Logistics and distribution are major industries as well as manufacturing in the City of San Luis and around its associated Port of Entry (POE), an official CANAMEX Corridor entry point accessing safe and efficient multi modal transportation networks to Mexico and Canada. Estimated 2012 population for San Luis is 31,080 and projected to double in size over the next decade, a component of the 205,174 estimated 2012 population for Yuma County. The city’s industrial base is expanding and the local economy is transitioning from agriculture and food processing to include construction, manufacturing, warehousing, and distribution. Major highways include Interstate 8 and U.S. Route 95. Rolle Airfield, located within the city proper and just outside of the inhabited areas, is a privately-owned commercial airport.

Across the U.S.-Mexican border is San Luis Rio Colorado, Sonora with a population well over 200,000 and approximately 44,000 people daily come across, making it one of Arizona’s busiest border crossings. The original 13-acre port now referenced as San Luis I was constructed at the commercial and business center of the City in 1930 to facilitate trade between the U.S. and Mexico and has since been expanded twice. The port provides daily access to privately operated vehicles via eight general lanes and two SENTRI lanes and also processes pedestrians and bicyclists.

The City of San Luis is working with the Arizona Department of Transportation (ADOT) to reconfigure the flow of traffic in the downtown area. A six plus month road improvement project begun in late March will ease traffic congestion in the city’s downtown commercial area, just north of the Mexican border, as well as enhance pedestrian safety and improve access to businesses. ADOT is managing the $7M project overseen by Paul Patane, ADOT

Yuma District Engineer with Bruce Fenske, ADOT Yuma District Development Engineer. ADOT is coordinating utility infrastructure relocations with several regional broadband providers, most notably CenturyLink and Time Warner Cable. Jenny Torres, Community Development Director for the City of San Luis is coordinating conversations with multiple providers about opportunities for new broadband infrastructure during this roadwork and in relation to several other pending industrial parks and development projects.

Additionally, expansion of the Customs and Border Patrol (CBP) southbound inspection capabilities should be completed in early 2014. The San Luis II port of entry is a new 80-acre processing facility located approximately five miles east of the original San Luis I port of entry with one of three lanes dedicated as a Free And Secure Trade (FAST) lane. This new port was designed to initially process 400 trucks per day with the potential to expand to 650 trucks per day by 2030 and includes an indoor temperature-controlled (60 degrees F) five-dock space for inspection of temperature-sensitive items or private interdiction activities.

The City of San Luis has approved a potential $1.5 billion Solar Wind Energy Tower Inc. project which if constructed would result in the tallest structure in North America at 2,250 feet tall and estimated to generate an average rate of 435 megawatt-hours per year.

- Yuma Sun article “Project seeks to ease road congestion in San Luis” on 12/8/13 - http://www.yumasun.com/news/project-seeks-to-ease-road-congestion-in-san-luis/article_8ee85f2a-6069-11e3-86ec-001a4bcf6878.html
- ADOT San Luis City Council Presentation on 11/12/13 - http://www.azdot.gov/docs/default-source/projects/san-luis-council-presentation-111213.pdf
- ADOT US95 San Luis Street Improvements Presentation 12/03/13 - http://www.azdot.gov/docs/default-source/projects/san-luis-public-meeting-presentation-120313.pdf
- Arizona Border Communities Roadmap (Arizona-Mexico Commission 12/13) - http://www.azmc.org/wp-content/uploads/2013/12/FINAL_Roadmap.pdf

Primary Focus Area Contacts:

Julie Engel, President/CEO
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Alan Pruitt, Economic Development Director

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Elizabeth Carpenter, Real Estate Broker (& Yuma industrial property owner)

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Phone: (928) 342-9851, Mobile: (928) 503-0110, carpenter.elizabeth88@gmail.com

Paul Patane, Yuma District Engineer & US95 San Luis Street Improvements Project Manager

Arizona Department of Transportation (http://www.azdot.gov/)
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Secondary Focus Area Contacts:

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Chad Coleman, Interim Director of Computer Information Systems

Arizona Western College (La Paz & Yuma Counties, http://www.azwestern.edu/)
Phone: 928-314-9531, chad.coleman@azwestern.edu

Craig Raborn, Transportation Planner

Western Arizona Council of Governments (WACOG - http://www.wacog.com/)
(http://www.wacog.com/transportation_services.html)
Phone: 928-377-1070, craigr@wacog.com

Charles Gutierrez, Associate Transportation Planner II/Traffic Data Management Supervisor

Yuma Metropolitan Planning Organization (YMPO - http://ympo.org/)
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Ed Jin, Chief Information Officer (CIO)

Information Technology Services Department, Yuma County
(http://www.co.yuma.az.us/index.aspx?page=398)
Phone: 928-373-1024, Main: 928-373-1000, ed.jin@yumacountyaz.gov

Leon Wilmot, Yuma County Sheriff

Yuma County Sheriff's Office (http://yumacountysheriff.org/)
Main: 928-783-4427, TF: 800-361-7794, leon.wilmot@ycso.yumacountyaz.gov

Additional City of San Luis & Yuma County Information:

- Yuma County - http://www.co.yuma.az.us/
- Greater Yuma Economic Development Corp. - http://www.greateryuma.org/
- Yuma County Chamber of Commerce - http://www.yumachamber.org/
- Yuma County Wikipedia Entry - http://en.wikipedia.org/wiki/Yuma_County,_Arizona

City of San Luis - http://www.cityofsanluis.org/

City of San Luis Wikipedia Entry - http://en.wikipedia.org/wiki/San_Luis,_Arizona

City of Yuma - http://www.ci.yuma.az.us/

Yuma Convention & Visitors Bureau - http://www.visityuma.com/

San Luis Community Asset Inventory

Individual

Bilingual Population
Multi-Generation Families
Colloborative Cross-Border Relationships
Young Population

Associations

Housing for America
Small Business Development Center
San Luis Chamber of Commerce
Yuma Private Industry Council
Border Mayors Coalition
Greater Yuma Economic Development Corporation
Western Arizona Economic Development District
Comité de Bienestar

Community Resources

San Luis Rio Colorado, Sonora, Mexico
Maquiladoras
Greater Yuma Industrial Authority
Solar Developments
ACT Call Center
Eastside Sewer Capacity
Water Availability and Water Rights
Empowerment Zone
Foreign Trade Zone #219
International Ports of Entry
San Luis Detention Facility
Northern Arizona University
Over 300 Acres of Industrial Land
Regional Public Transportation
Near Yuma International Airport
Buildable Land
K-14 Education
Military Presence
University of Arizona
Arizona State Prison
Arizona Western College
Western Portion of CANAMEX
Guaymas Port and Coastal Highway in Mexico

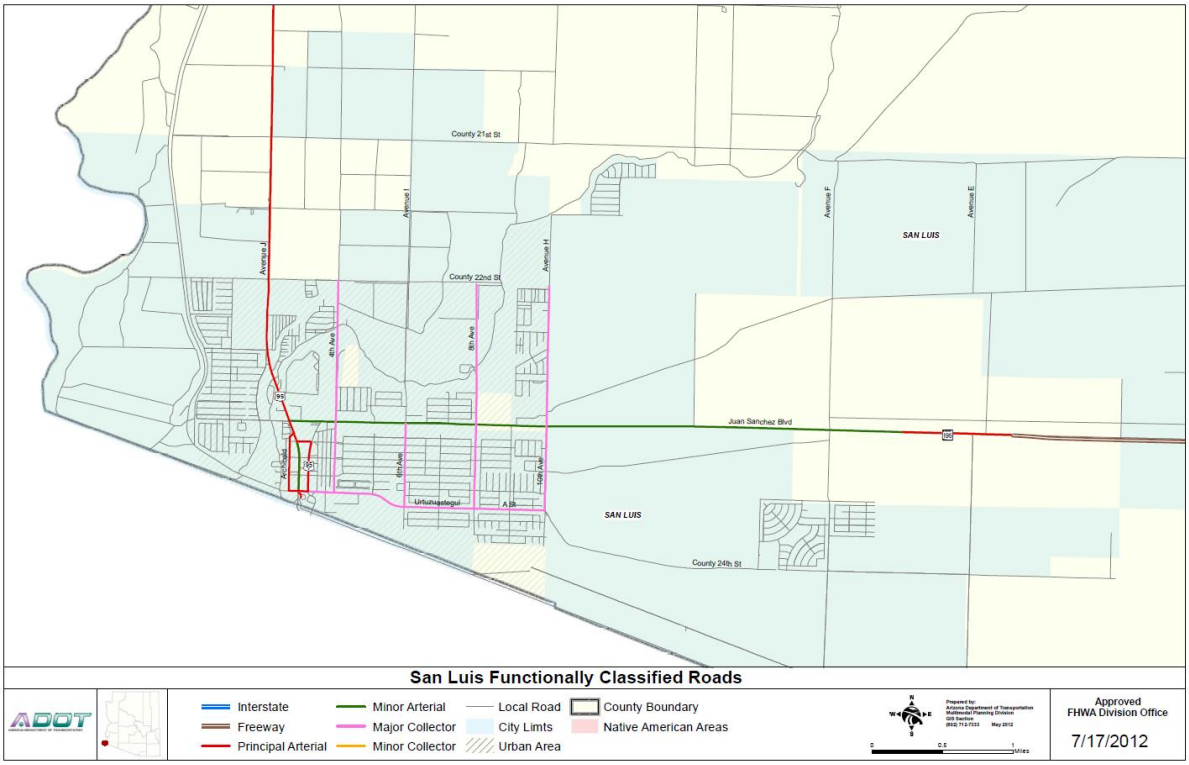
Natural Resources

Good Connection to Rocky Point, Mexico
El Golfo de Santa Clara, Sonora, Mexico
Advanced Agriculture
Close to San Diego Attractions
Parks and Recreation
Near Yuma Tourist Destinations
Vast State and Federal Land Holdings

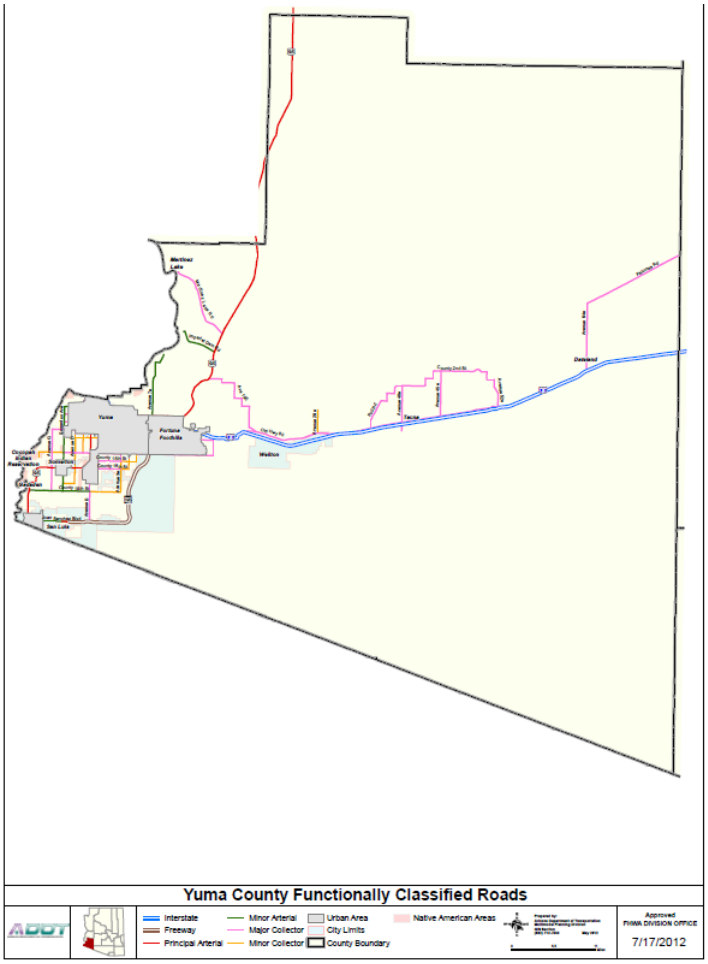
Source: Arizona Border Communities Roadmap 12/13

TDS FCC CAF Round 2 in Yuma Area

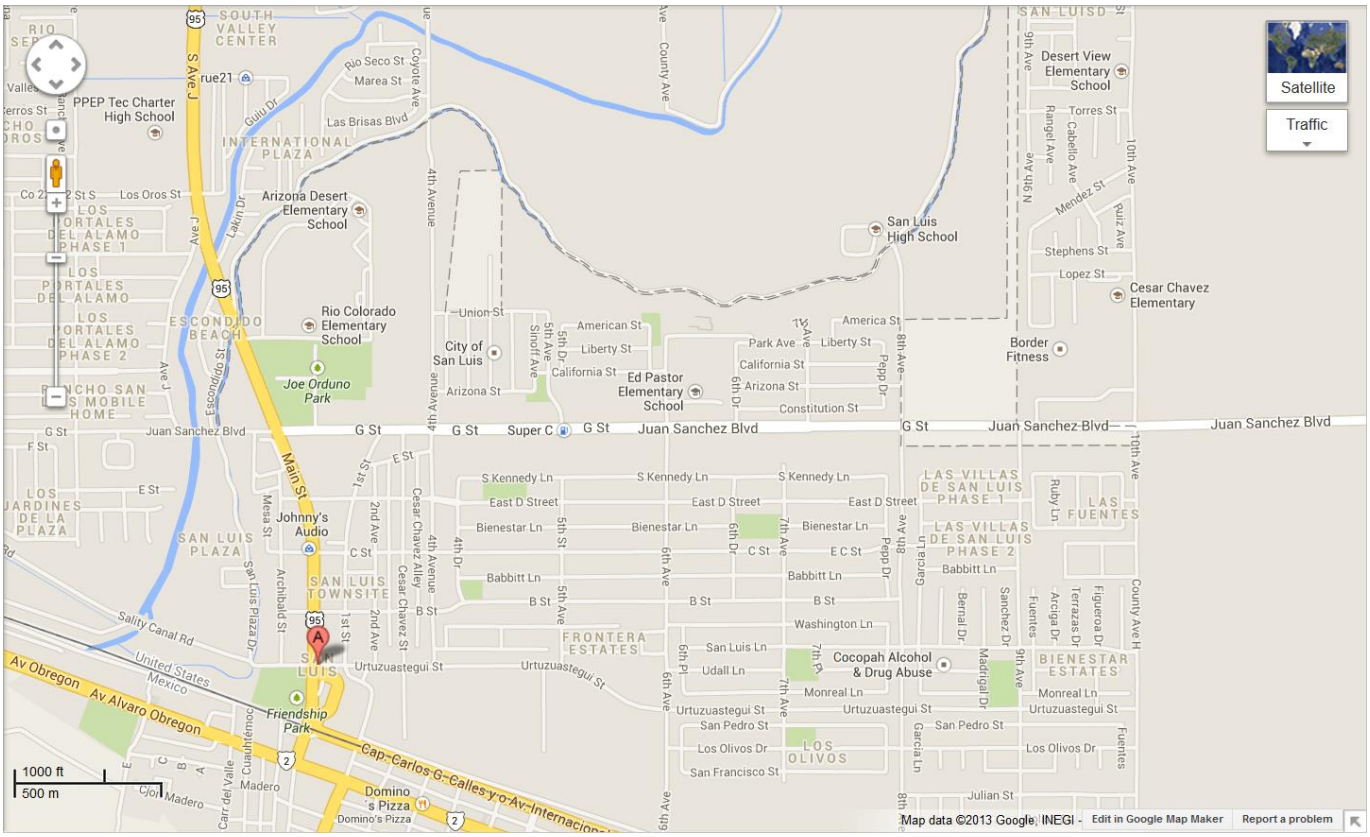
City of San Luis Functionally Classified Roads



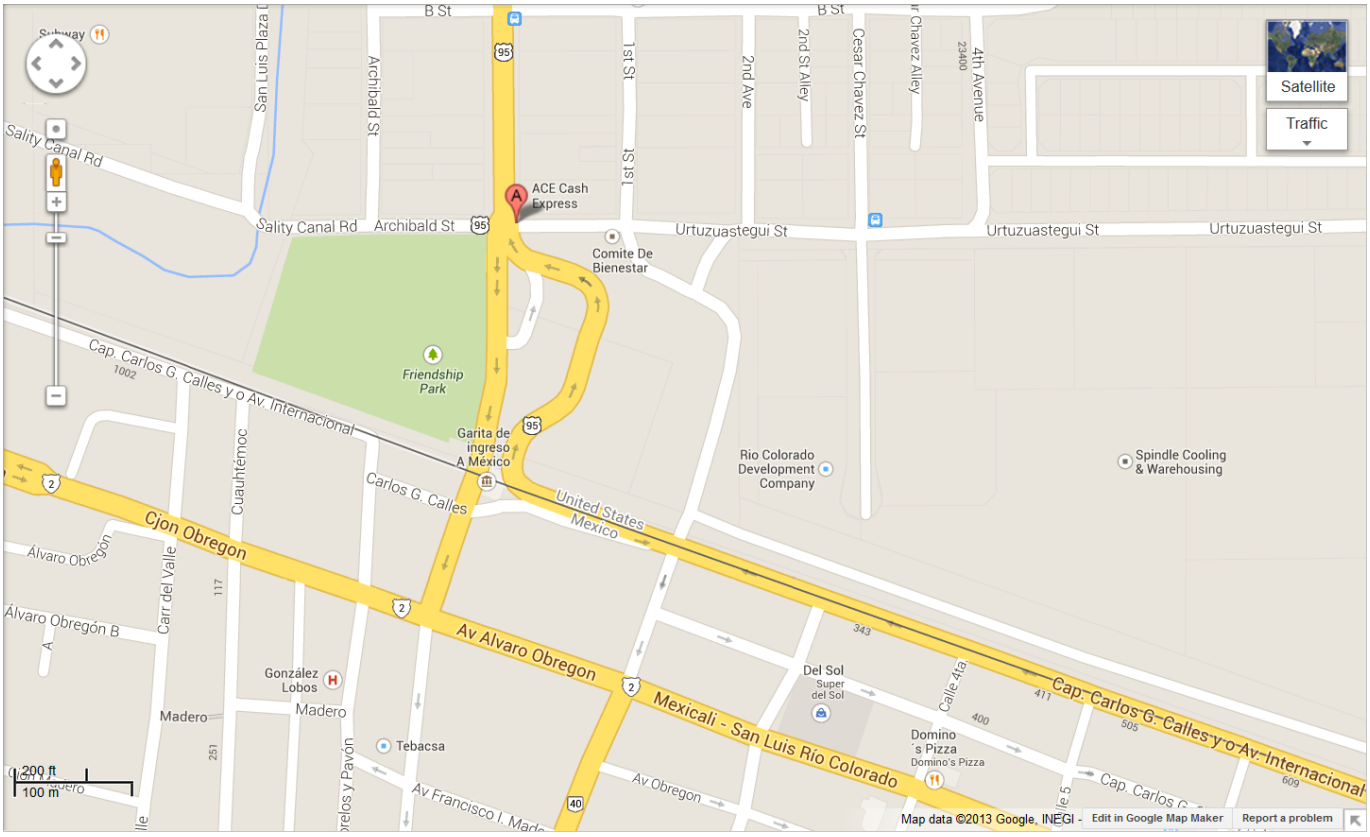
Yuma County Functionally Classified Roads



City of San Luis Google Map Detail

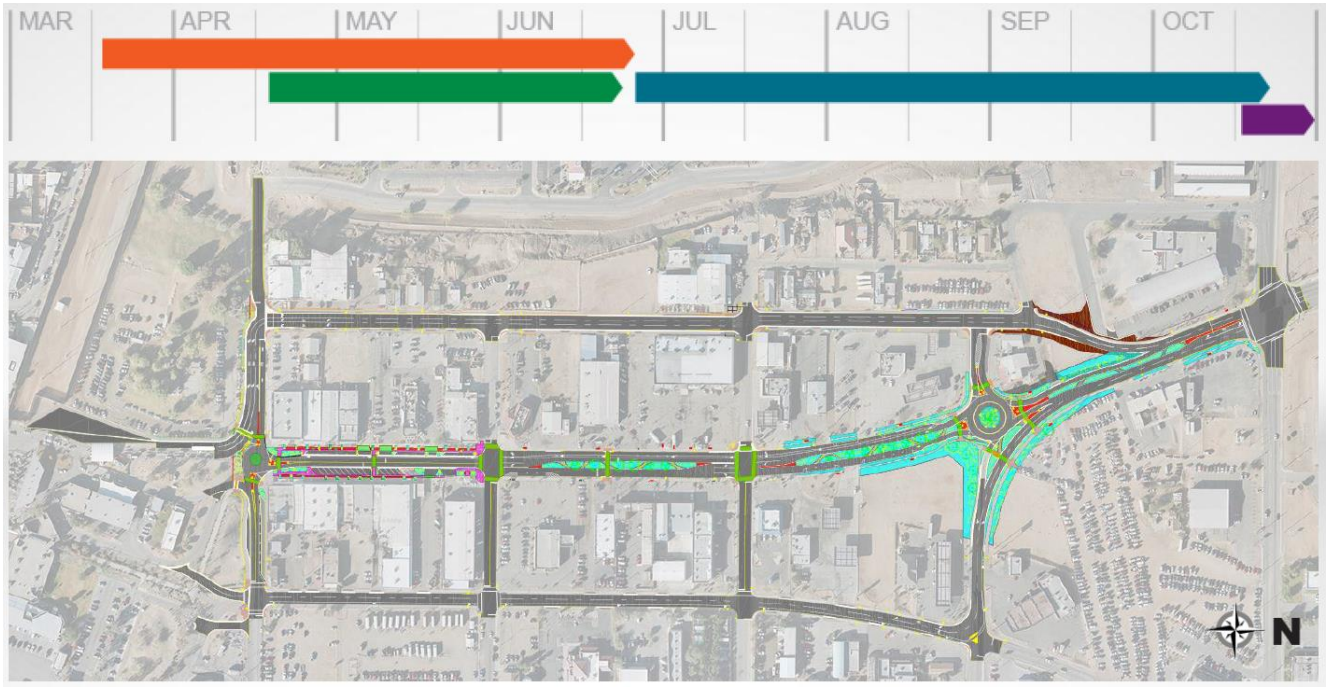


San Luis Port of Entry Google Map Detail



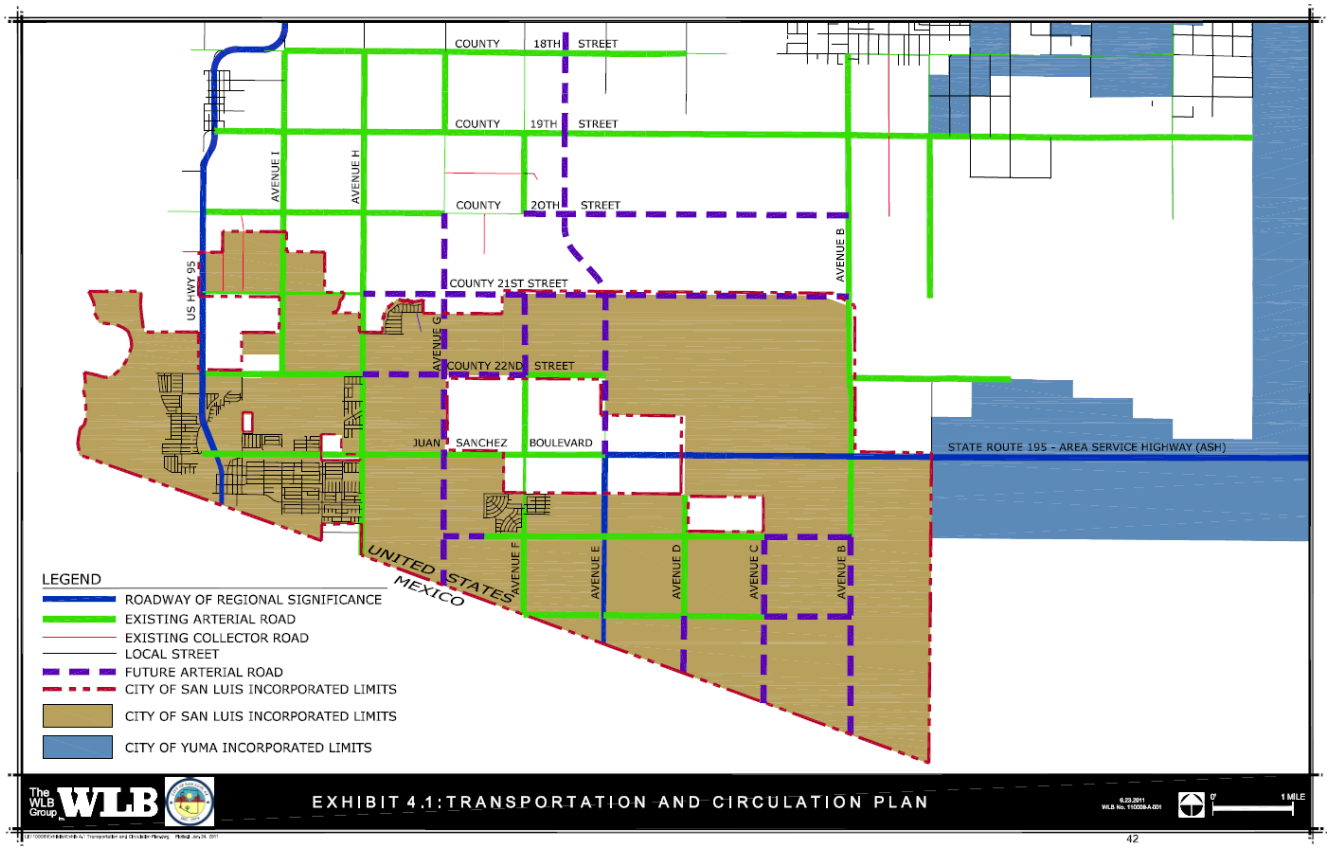
City of San Luis Today

City of San Luis Road Improvement Project 2014

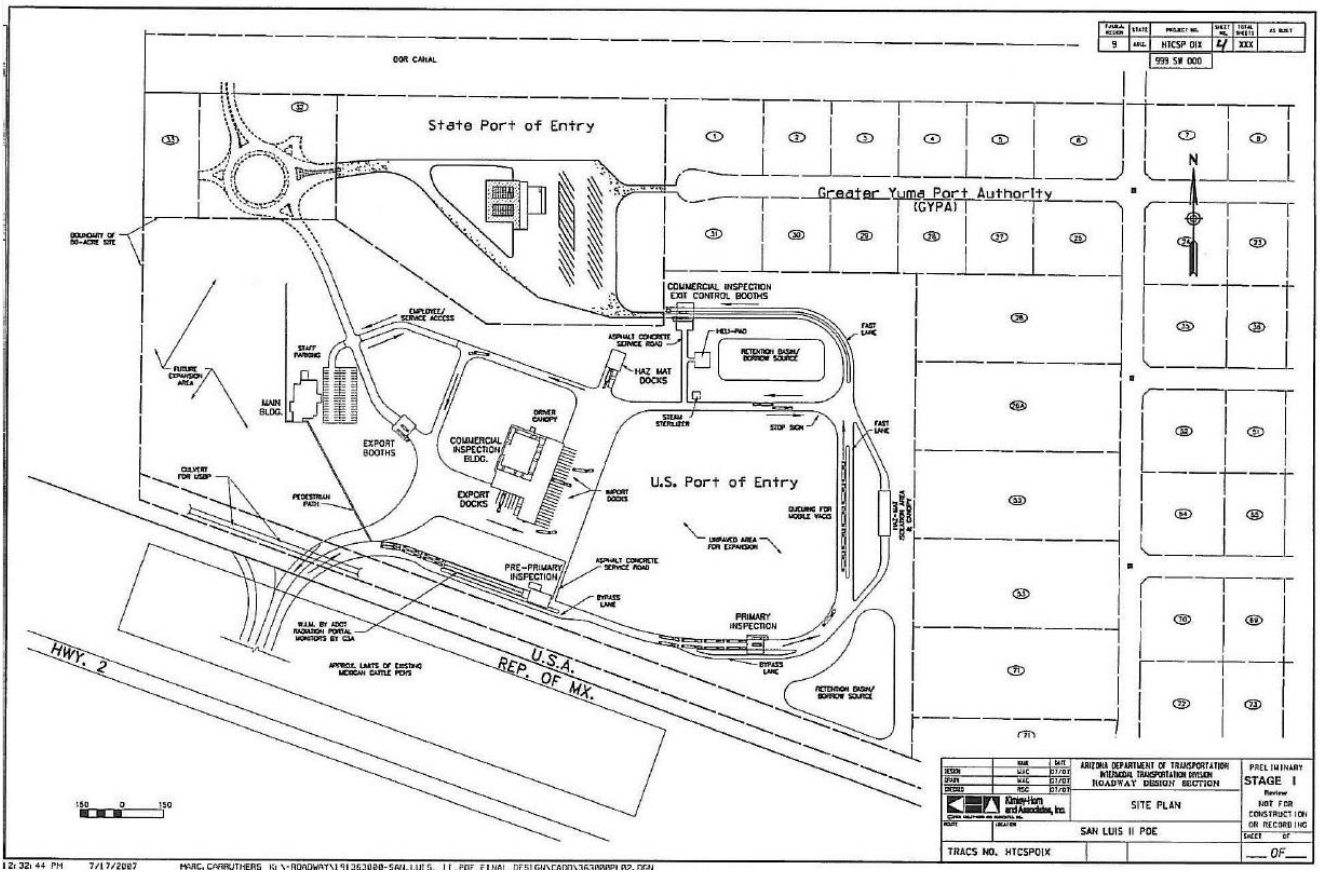


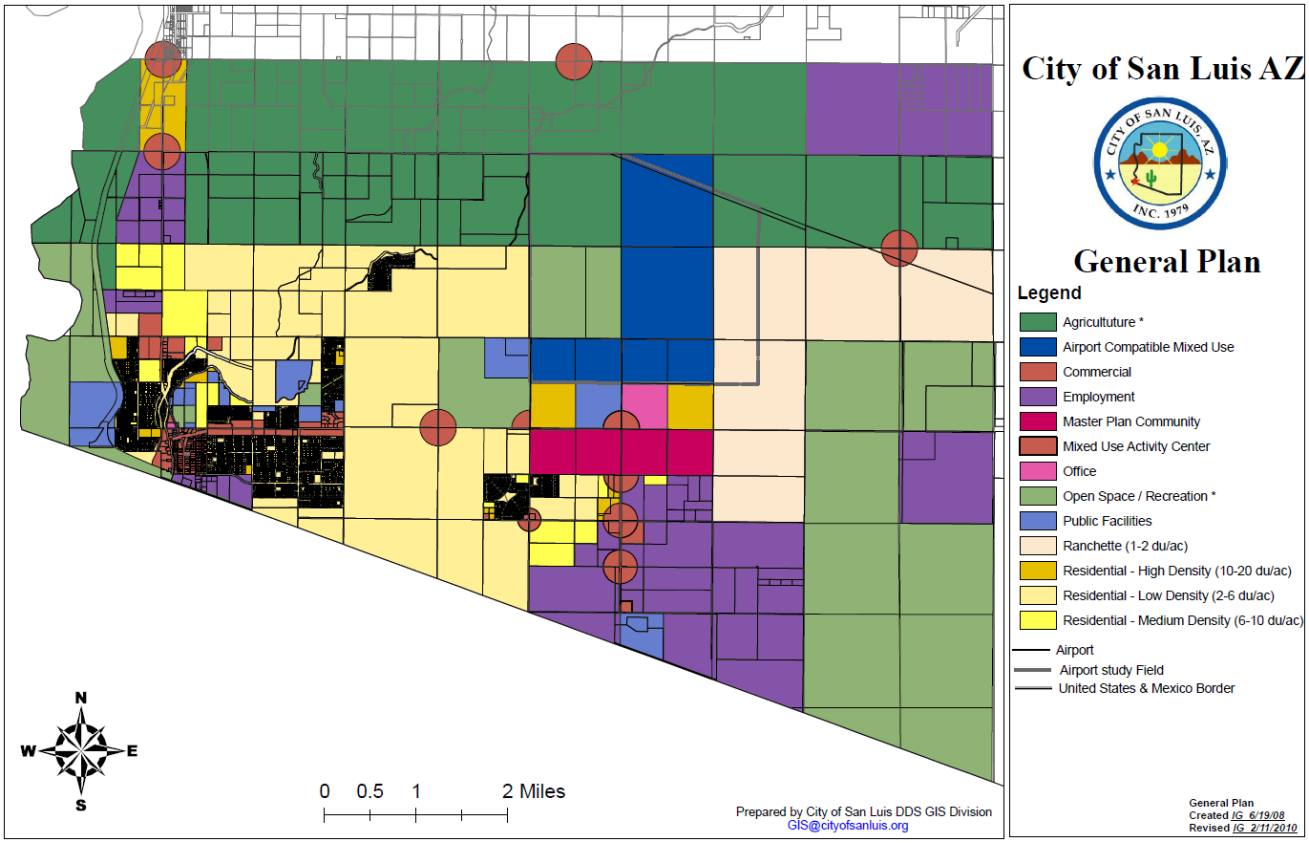
Source: Arizona Department of Transportation (ADOT)

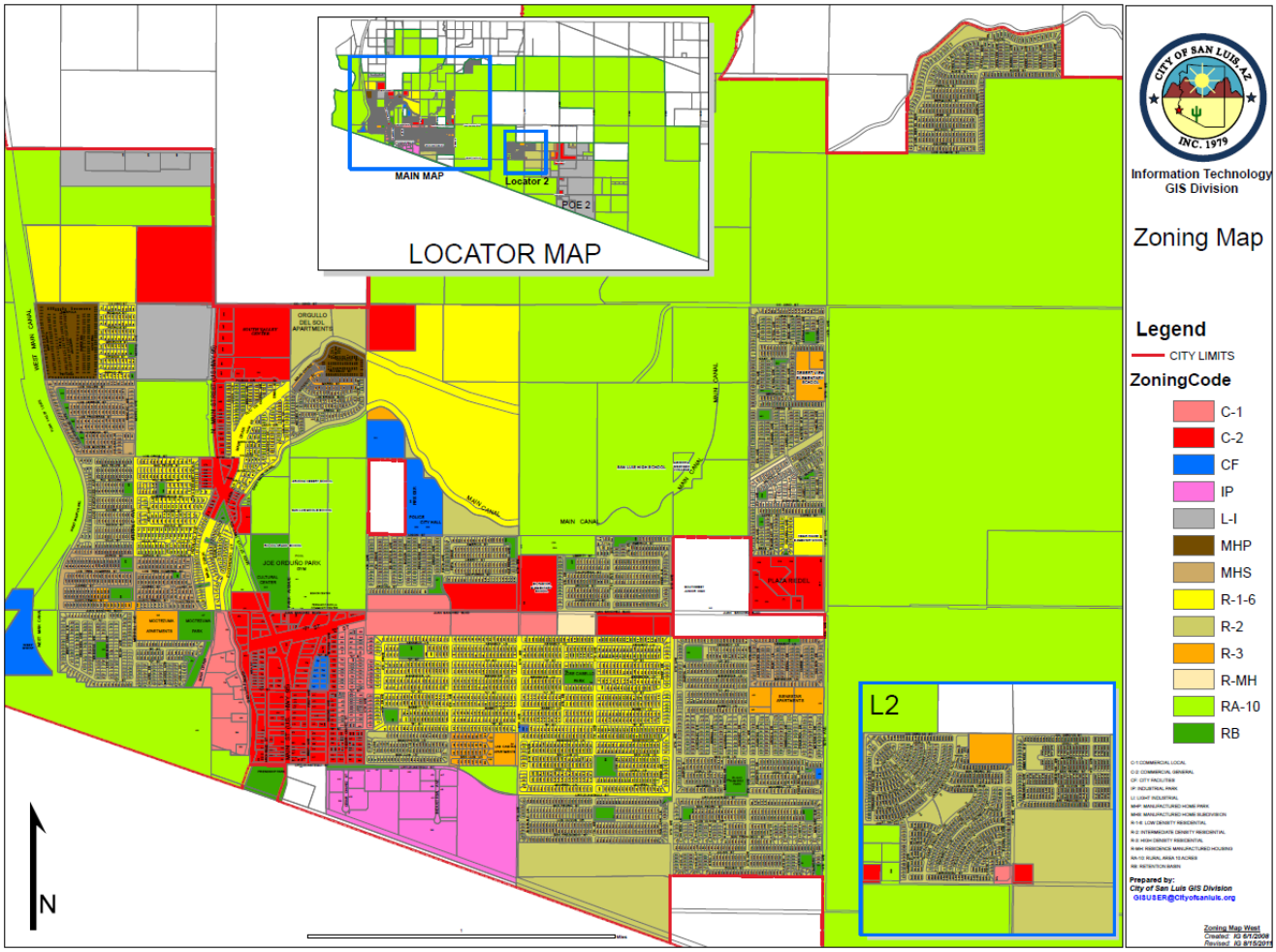
City of San Luis Transportation & Circulation Plan

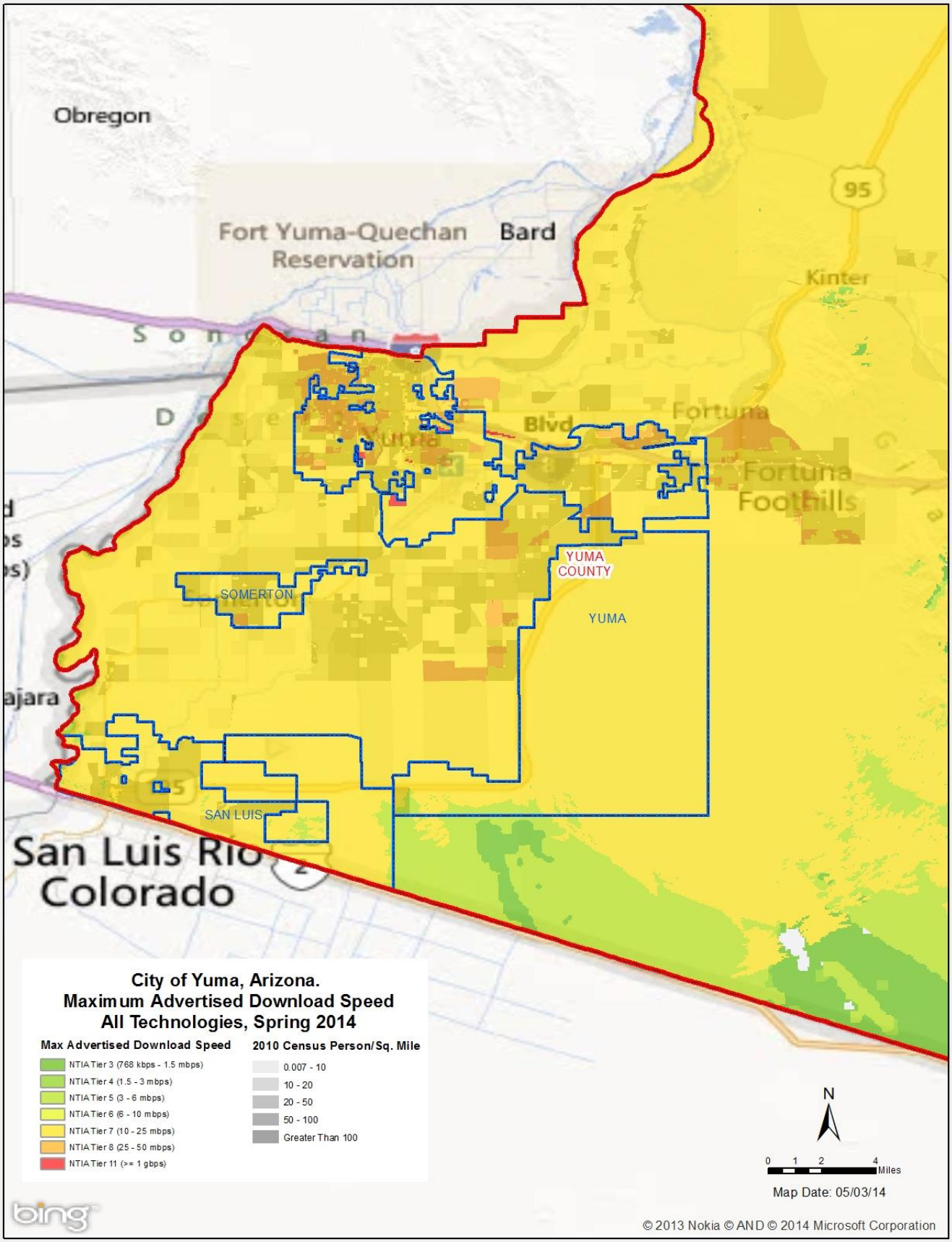


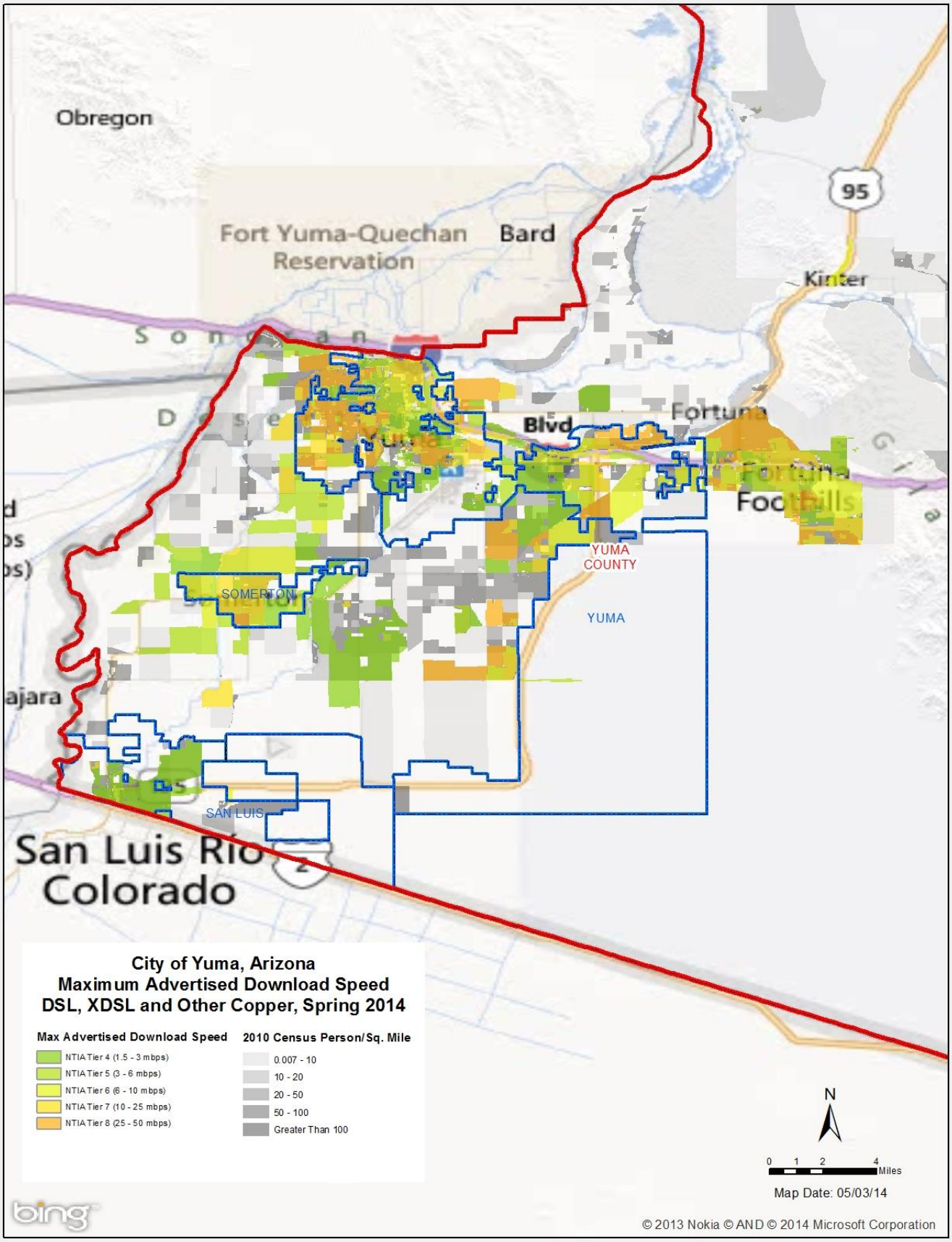
City of San Luis Proposed Industrial Area

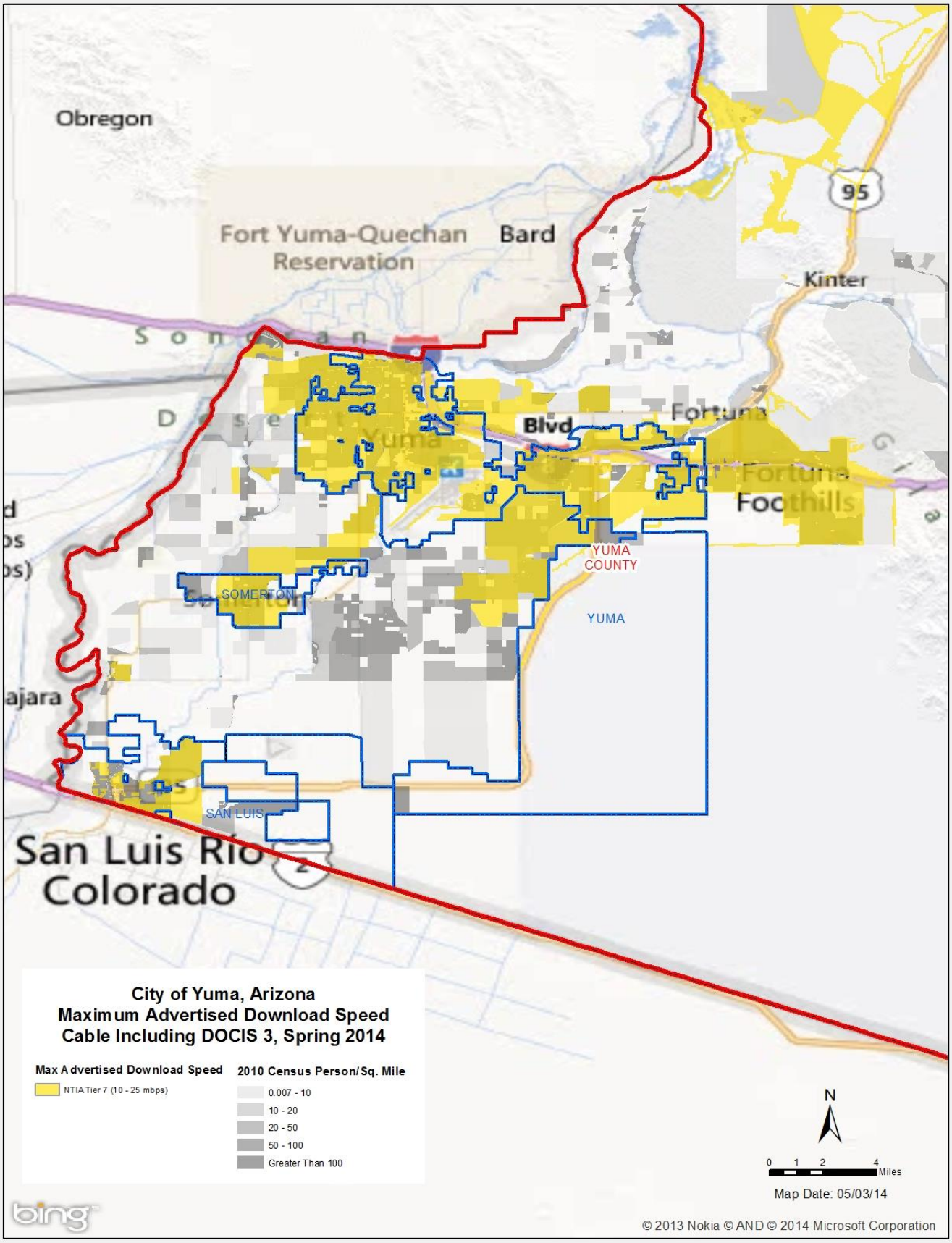



City of San Luis AZ
General Plan
Legend
Agriculture *
Airport Compatible Mixed Use
Commercial
Employment
Master Plan Community
Mixed Use Activity Center
Office
Open Space / Recreation *
Public Facilities
Ranchette (1-2 du/ac)
Residential - High Density (10-20 du/ac)
Residential - Low Density (2-6 du/ac)
Residential - Medium Density (6-10 du/ac)
Airport
Airport study Field
United States & Mexico Border
N
W
E
S
0 0.5 1 2 Miles
Prepared by City of San Luis DDS GIS Division
GIS@cityofsanluis.org
General Plan
Created IG 6/19/08
Revised IG 2/11/2010


LOCATOR MAP
MAIN MAP
Locator 2
POE 2
L2
N
Information Technology
GIS Division
Zoning Map
Legend
CITY LIMITS
ZoningCode
C-1
C-2
CF
IP
L-I
MHP
MHS
R-1-6
R-2
R-3
R-MH
RA-10
RB
Prepared by:
City of San Luis GIS Division
GISUSER@Cityofsanluis.org


Obregon
Fort Yuma-Quechan Reservation
Bard
95
Kinter
Fortuna
Blvd
Fortuna Foothills
YUMA COUNTY
YUMA
SOMERTON
SAN LUIS
San Luis Río Colorado
City of Yuma, Arizona.
Maximum Advertised Download Speed
All Technologies, Spring 2014
Max Advertised Download Speed
NTIA Tier 3 (768 kbps - 1.5 mbps)
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 6 (6 - 10 mbps)
NTIA Tier 7 (10 - 25 mbps)
NTIA Tier 8 (25 - 50 mbps)
NTIA Tier 11 (>= 1 gbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
N
0 1 2 4 Miles
Map Date: 05/03/14
bing
© 2013 Nokia © AND © 2014 Microsoft Corporation


Obregon
Fort Yuma-Quechan Reservation
Bard
95
Kinter
Blvd
Fortuna
Foothills
YUMA COUNTY
YUMA
SOMERTON
SAN LUIS
San Luis Rio Colorado
City of Yuma, Arizona
Maximum Advertised Download Speed
DSL, XDSL and Other Copper, Spring 2014
Max Advertised Download Speed
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 6 (6 - 10 mbps)
NTIA Tier 7 (10 - 25 mbps)
NTIA Tier 8 (25 - 50 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
N
0 1 2 4 Miles
Map Date: 05/03/14
bing
© 2013 Nokia © AND © 2014 Microsoft Corporation


Obregon
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Bard
95
Kinter
Blvd
Fortuna Foothills
YUMA COUNTY
YUMA
SOMERTON
SAN LUIS
San Luis Rio Colorado
City of Yuma, Arizona
Maximum Advertised Download Speed
Cable Including DOCIS 3, Spring 2014
Max Advertised Download Speed
NTIA Tier 7 (10 - 25 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
N
0 1 2 4 Miles
Map Date: 05/03/14
bing
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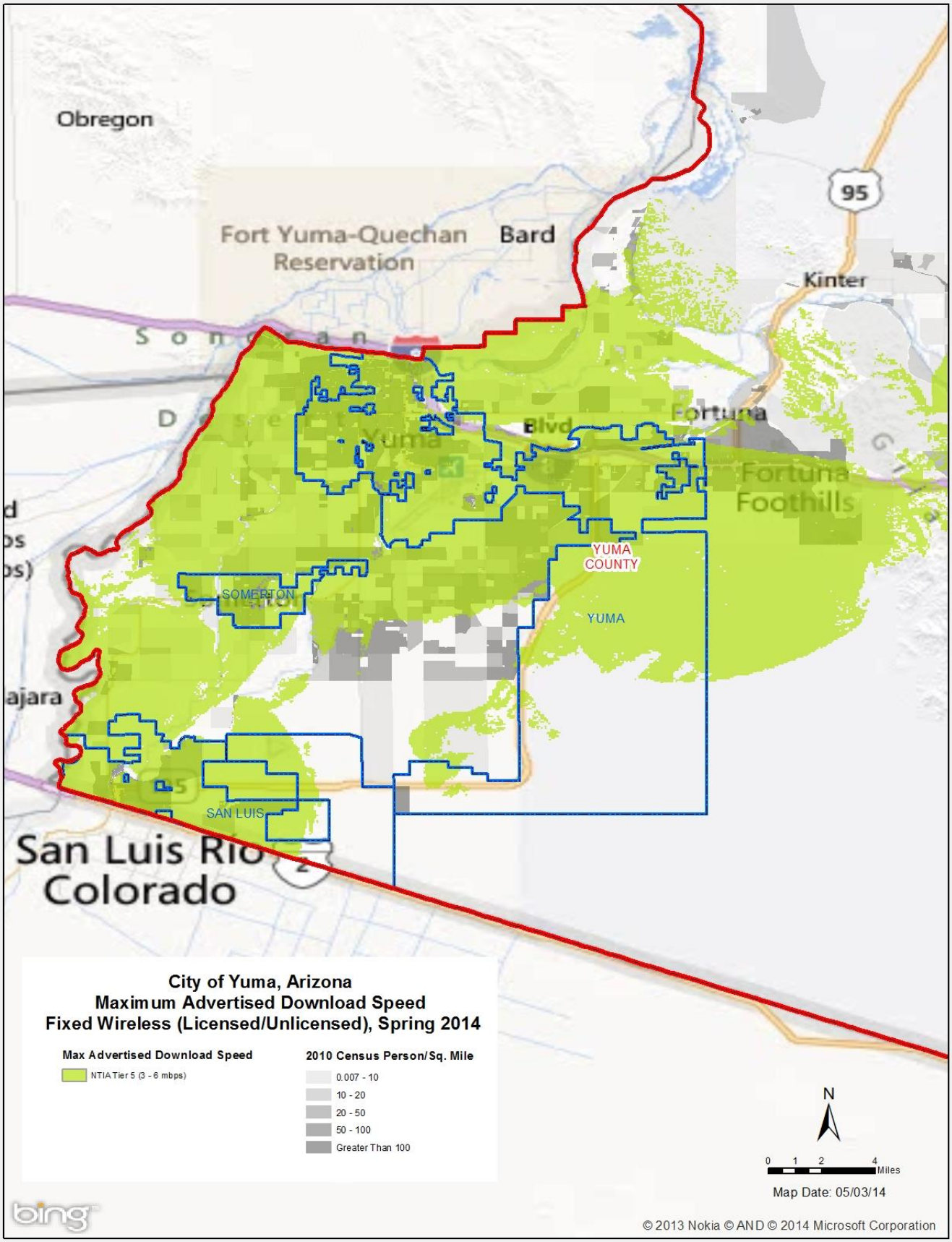
Obregon
Fort Yuma-Quechan Reservation
Bard
95
Kinter
Fortuna
Fortuna Foothills
YUMA COUNTY
YUMA
SOMERTON
SAN LUIS
San Luis Río Colorado
City of Yuma, Arizona
Maximum Advertised Download Speed
Fixed Wireless (Licensed/Unlicensed), Spring 2014
Max Advertised Download Speed
NTIA Tier 5 (3 - 6 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
N
0 1 2 4 Miles
Map Date: 05/03/14
bing
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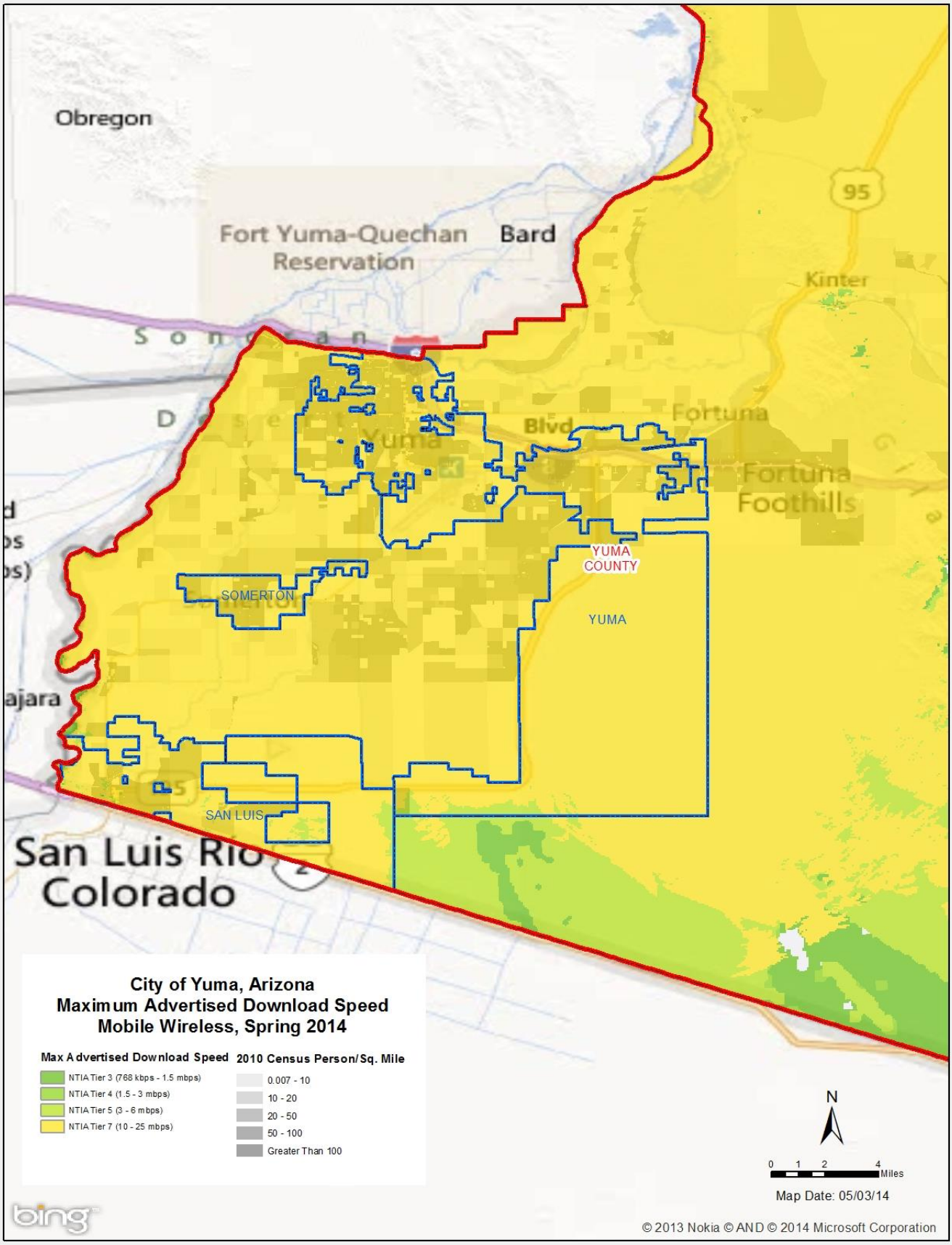
Obregon
Fort Yuma-Quechan Reservation
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95
Kinter
Fortuna
Fortuna Foothills
Blvd
YUMA COUNTY
YUMA
SOMERTON
SAN LUIS
San Luis Río Colorado
City of Yuma, Arizona
Maximum Advertised Download Speed
Mobile Wireless, Spring 2014
Max Advertised Download Speed
NTIA Tier 3 (768 kbps - 1.5 mbps)
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 7 (10 - 25 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
N
0 1 2 4 Miles
Map Date: 05/03/14
bing
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Yuma County Broadband Providers (14)

Broadband Provider	Service Type	Advertised Download Speed	Advertised Upload Speed	Download Speed Tier	Upload Speed Tier
Airband	Fixed Wireless	6 - 10 Mbps	1.5 - 3 Mbps	6	4
AT&T Mobility	Mobile Wireless	1.5 - 3 Mbps	768 Kbps - 1.5 Mbps	4	3
		3 - 6 Mbps	3 - 6 Mbps	5	5
Beamspeed	Fixed Wireless	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
CenturyLink	DSL (Asymmetric)	1.5 - 3 Mbps	768 Kbps - 1.5 Mbps	4	3
		3 - 6 Mbps	200 - 768 Kbps	5	2
		3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
		6 - 10 Mbps	768 Kbps - 1.5 Mbps	6	3
		10 - 25 Mbps	768 Kbps - 1.5 Mbps	7	3
		25 - 50 Mbps	3 - 6 Mbps	8	5
		25 - 50 Mbps	10 - 25 Mbps	8	7
Frontier Southwest	DSL (Asymmetric)	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
		10 - 25 Mbps	1.5 - 3 Mbps	7	4
		25 - 50 Mbps	3 - 6 Mbps	8	5
HNS (Hughes, Echostar)	Satellite	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
		10 - 25 Mbps	1.5 - 3 Mbps	7	4
Level 3 Communications	Fiber	> 1 Gbps	> 1 Gbps	11	11
Skycasters (VSAT Systems)	Satellite	6 - 10 Mbps	1.5 - 3 Mbps	6	4
Sprint Communications	Mobile Wireless	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
StarBand Communications	Satellite	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
TDS Telecom	DSL (Asymmetric)	10 - 25 Mbps	768 Kbps - 1.5 Mbps	7	3
Time Warner Cable	Cable	10 - 25 Mbps	1.5 - 3 Mbps	7	4
Verizon Communications	Mobile Wireless	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
ViaSat	Satellite	1.5 - 3 Mbps	200 - 768 Kbps	4	2
		3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3

WACOG Broadband BCA Round 2

Yuma Area Aviation Focus Area (Region 2)

The Yuma Area Aviation includes multiple public and military facilities including the Yuma International Airport, Marine Corps Air Station (MCAS), U.S. Army Yuma Proving Ground (YPG), and proposed Southwest Arizona Unmanned Aerial Systems (UAS) Test Range Overlay. This supports the general aviation needs for the Yuma area as well as a significant and growing military and aerospace & defense industry presence.

- Arizona was not selected as one of six federal Aircraft Systems (UAS) test centers which would have included the Southwest Arizona UAS Test Range in the Yuma area. Nonetheless, regional military and aerospace & defense industry is seeing strong growth with national and international companies establishing and/or growing their presence at the Yuma County Airport and surrounding areas, as well as co-located at military bases where appropriate. Broadband access to existing and planned office and industrial facilities has become a critical economic development requirement.
- There remains limited DSL and Cable Modem broadband coverage and delivery speeds. Community and stakeholders need to demonstrate aggregate demand and future growth to existing broadband providers seeking further investment over time.
- CenturyLink and TW Cable are making strategic investments in incremental fiber and service offerings. TDS Telecom is expanding DSL service availability in the area under FCC CAF Round 2 funding. Good dialogue has been ongoing between economic development stakeholders and selective broadband providers which should be pursued and leveraged going forward.
- GovNet will bring higher level services to a good number of institutions in the education, healthcare, and government arenas as its deployment matures. However this remains an intermediate step due to limited carrying capacities.
- There is community interest in a possible open wireless project where a public network is established over meshed network elements. Primarily, Wi-Fi access points would be securely shared by existing broadband customers (residential, businesses, anchor institutions) with public users and wireless bridges or other connectivity employed to bridge Wi-Fi clusters if and where needed. See https://openwireless.org/.

The Yuma area has a very strong commercial and military aviation infrastructure and associated economic activity with a significant military and aerospace & defense industry presence. Aviation assets includes Yuma International Airport, the Marine Corps Air Station, and the U.S. Army Yuma Proving Ground.

Yuma Aviation Industrial Center is being built at a cost of $7.1 million. It is part of the Defense Contractors Complex (DCC) being developed by the Yuma County Airport Authority. The multitenant center will be available for lease by defense contractors and is expected to create 150 jobs and generate more than $1 million in private investment. The airport received a $3.7 million Economic Development Administration grant to help fund the project. The Aviation Industrial Center on the west side of the airport within the Defense Contractor Complex provides a 32,000-square-foot state-of-the-art, multi-tenant aircraft hangar and maintenance office complex that has two bay hangars designed for use by aerospace companies on a short- or long-term basis.

Marine Corps Air Station (MCAS) Yuma is the busiest air station in the Marine Corps, supporting 80 percent of the Corps' air-to-ground aviation training because of its access to 2.8 million acres of training ranges and superb flying weather. Each year, approximately 100 aviation units deploy here for training, bringing about 14,000 personnel and 600 aircraft to Yuma for periods lasting from a few days to seven weeks. Delivery of the F-35 continues at MCAS Yuma continues with the B variant with short-takeoff and vertical-landing capability expected to reach its full complement of 16 jets shortly. MCAS Yuma is slated to have five F-35 squadrons, each with 16 aircraft, and one operational test and evaluation squadron of eight aircraft. These 88 aircraft will replace Yuma's four existing squadrons of 56 AV-8B Harriers.

The U.S. Army Yuma Proving Ground (YPG) is the county's largest single civilian employer. At 1,300 square miles, YPG today is one of the world's largest military installations, hosting up to 100 tests simultaneously. Every year, tens of thousands of artillery, mortar and missile rounds are fired, 36,000 parachute drops take place, over 130,000 test miles are driven, and nearly 4000 air sorties are flown. YPG has had a huge and varied testing workload over its history, including the Apache helicopter, M-1 Abrams tank, Bradley Fighting Vehicle, Stryker armored vehicle, virtually all of the Army's artillery and ground weapon systems, mine, countermine and demolitions testing and the global positioning system (GPS) now used worldwide. YPG now hosts more than 17,000 visitors every year, making it a substantial contributor to the local hospitality industry.

There was a possible pending federal award to Arizona of a major system of Unmanned Aircraft Systems (UAS) test centers including the Southwest Arizona UAS Test Range Overlay in the area, but Arizona was not one of the six proposals approved by the FAA in December 2013. However, the Arizona Commerce Authority indicates that Arizona is considering several options from seeking a Certificate of Authorization, which would allow for the testing of specific (unmanned aircraft systems), to pursuing partnerships with states designated as test sites.

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Additional Yuma Area Aviation Information:

- Yuma County - http://www.co.yuma.az.us/
- Greater Yuma Economic Development Corp. - http://www.greateryuma.org/
- Yuma County Chamber of Commerce - http://www.yumachamber.org/
- Yuma County Wikipedia Entry - http://en.wikipedia.org/wiki/Yuma_County,_Arizona

City of Yuma - http://www.ci.yuma.az.us/

Yuma Convention & Visitors Bureau - http://www.visityuma.com/

Western Arizona Economic Development District (WAEDD) - http://www.waedd.org/

ADOT Economic Impact of Aviation in Arizona 2012 - http://www.azdot.gov/docs/default-source/planning/the_economic_impact_of_aviation_in_arizona_tech_report_june_2013_final.pdf

Yuma International Airport - http://www.yumainternationalairport.com/
http://www.yumachamber.org/member_detail.html?member_id=7089
http://en.wikipedia.org/wiki/Yuma_International_Airport

Defense Contractor Compound - http://www.defensetesting.com/

Yuma's UAS Capabilities - http://www.defensetesting.com/uas.htm

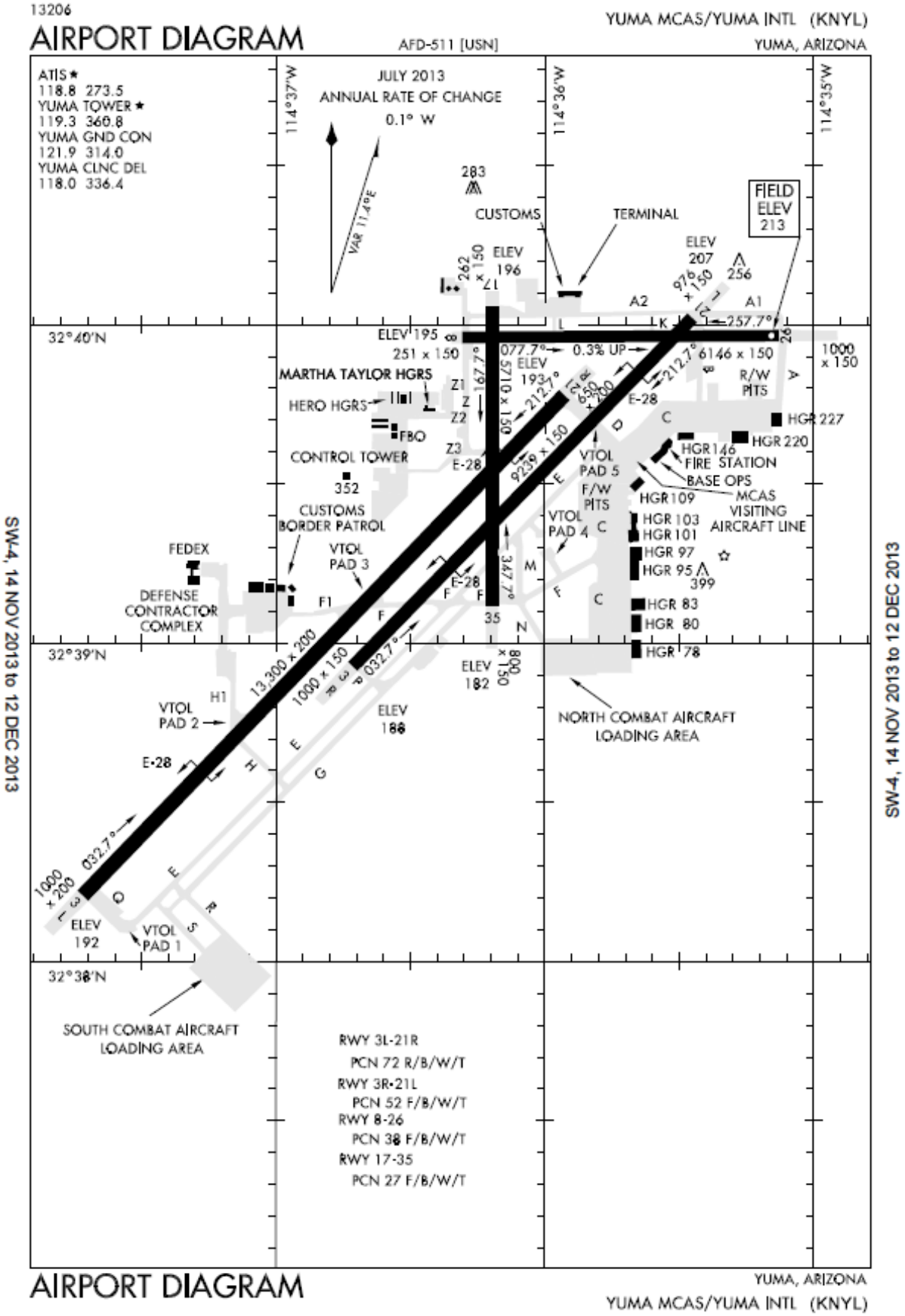
Rolle Field Master Plan - http://rollemasterplan.com/

Marine Corps Air Station (MCAS) Yuma - http://www.mcasyuma.marines.mil/

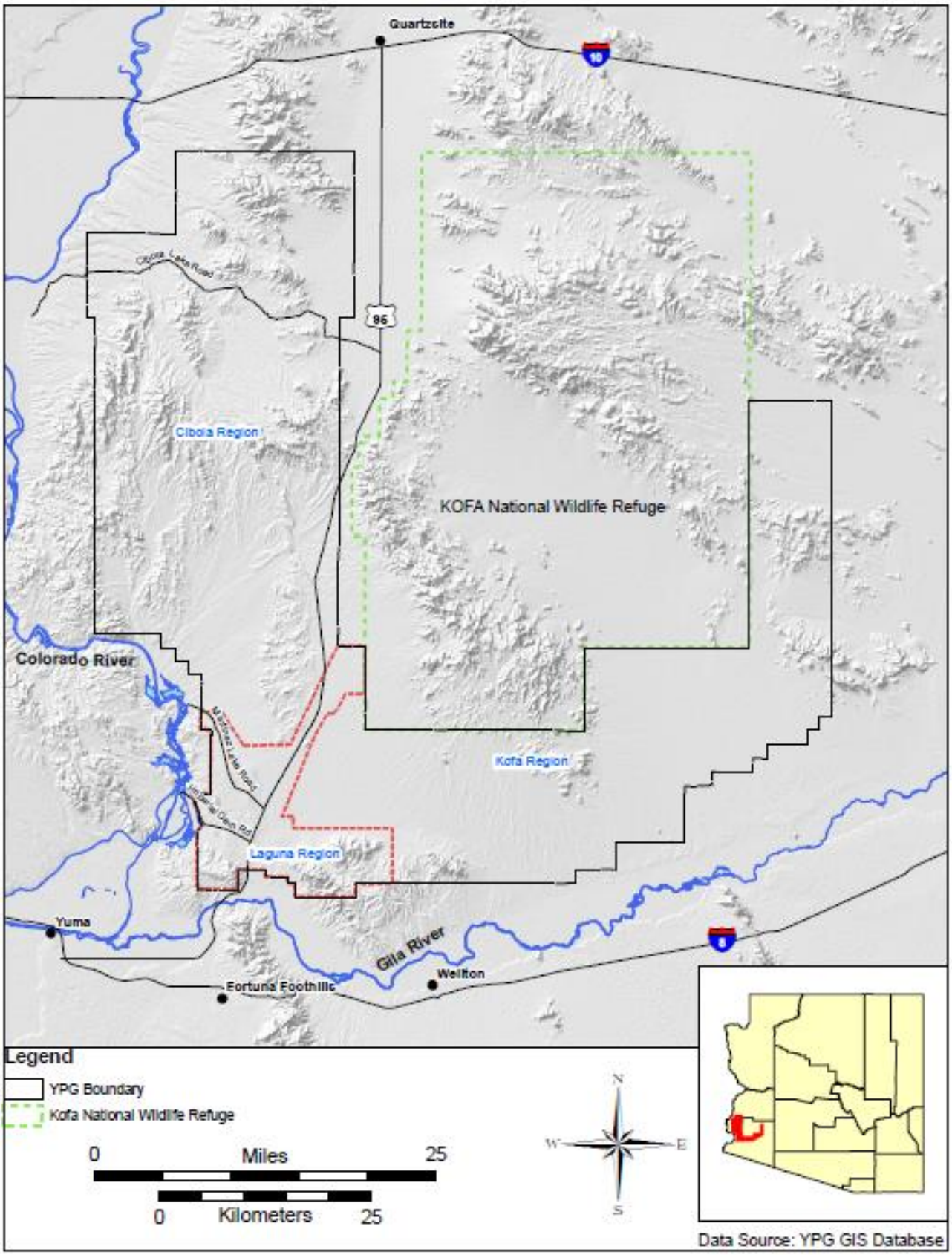
U.S. Army Yuma Proving Grounds (YPG) - http://www.yuma.army.mil/

Visit Yuma Military Asset Info - http://www.visityuma.com/military.html

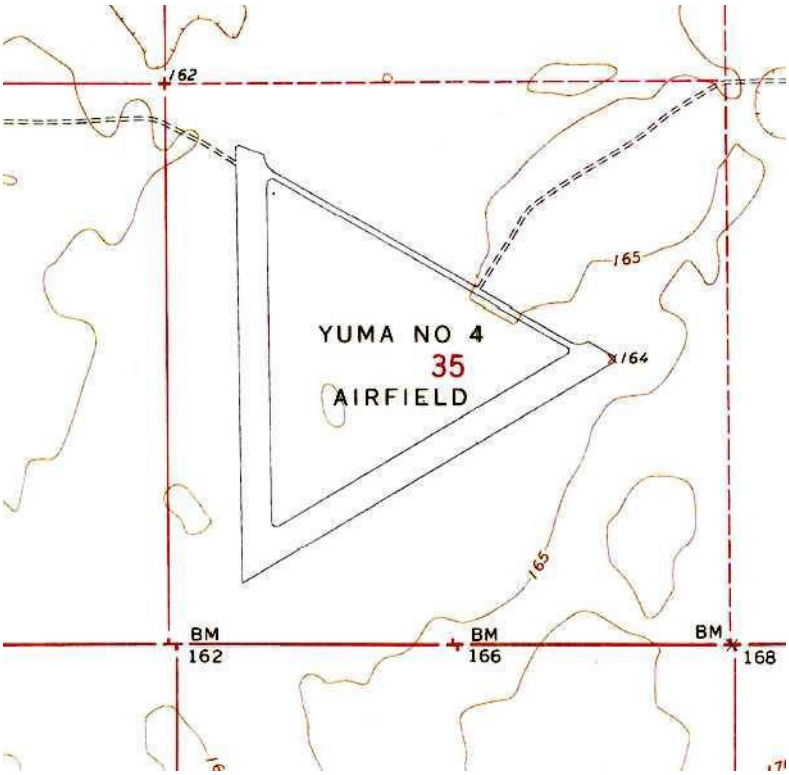
Yuma MCAS & Yuma International FAA Airport Diagram



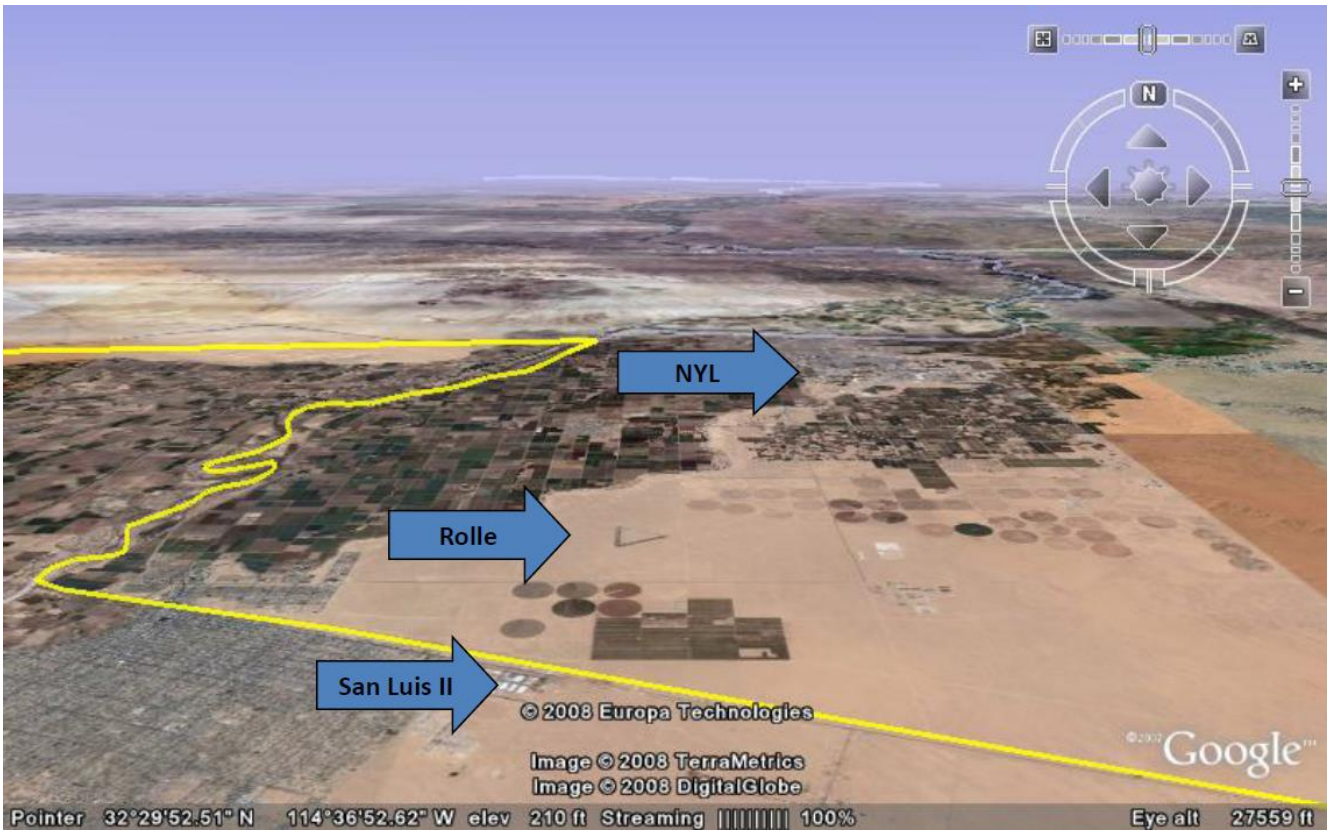
U.S. Army Yuma Proving Grounds (YPG) General Location



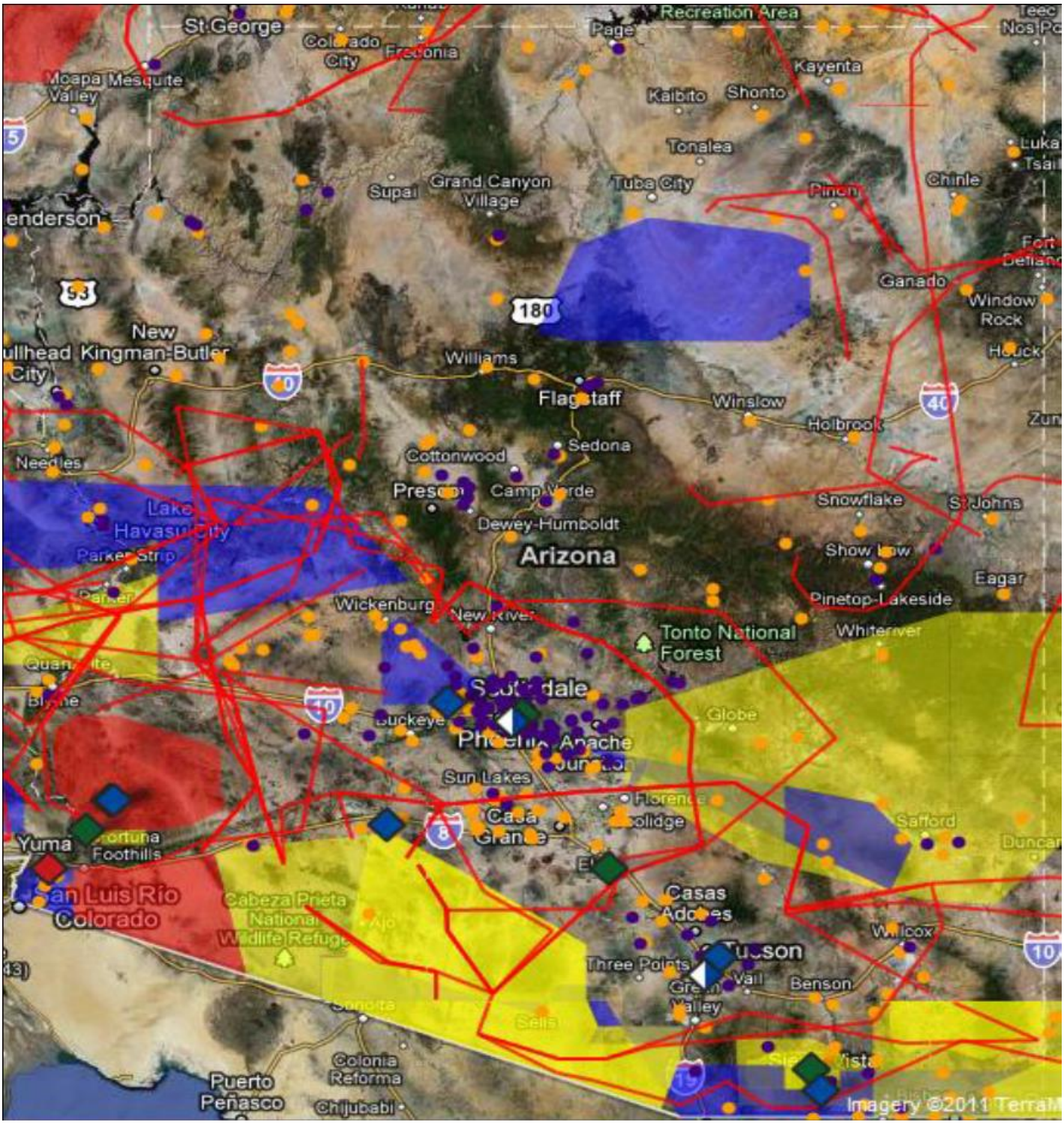
Rolle Field Location & Layout



Rolle Field in Relation to San Luis POE

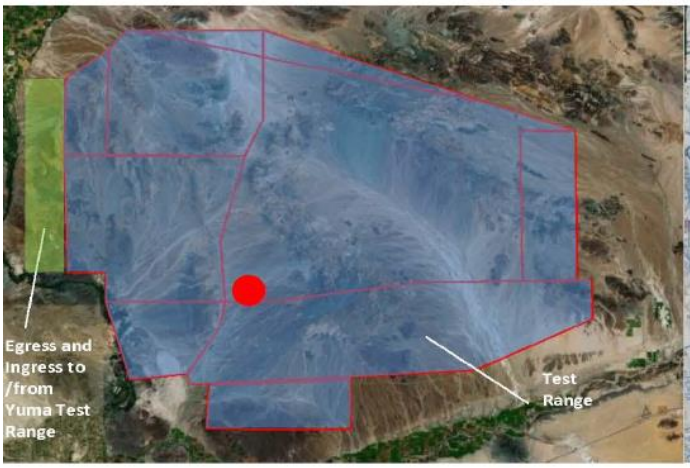


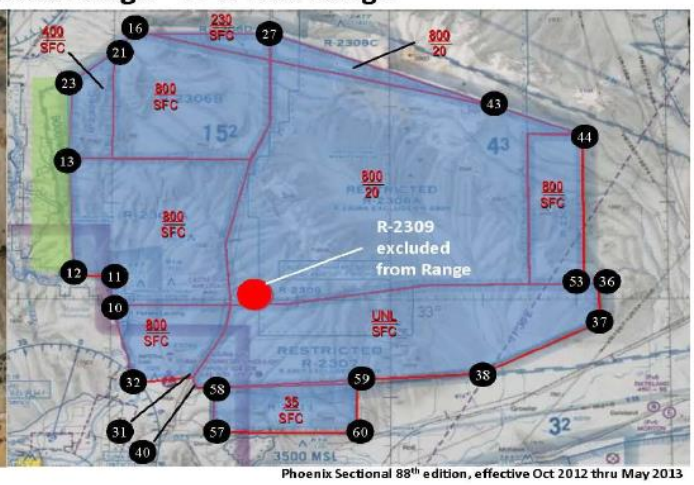
Arizona Unmanned Aerial Systems (UAS) Special Use Airspace



Source: Aerospace & Defense Arizona (http://www.azaerospace.com/)

AzTRC Southwest Range - YPG Test Range



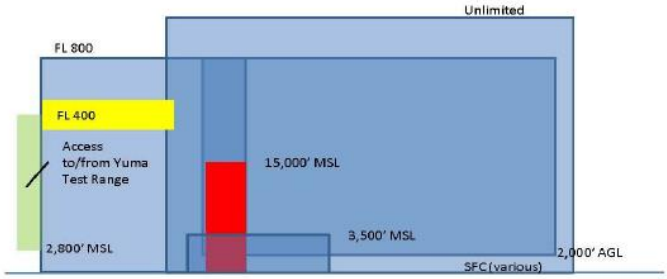


Phoenix Sectional 88th edition, effective Oct 2012 thru May 2013

Test Range Airspace		
10	33.0000	-114.5008
11	33.0339	-114.5008
12	33.0339	-114.5675
13	33.2542	-114.5778
16	33.4744	-114.4411
21	33.4406	-114.5008
23	33.3897	-114.5778
27	33.4744	-114.2175
31	32.8811	-114.3508
32	32.8642	-114.4647
36	33.0339	-113.6231

Test Range Airspace		
37	32.9828	-113.6231
38	32.8811	-113.8369
40	32.8642	-114.3508
43	33.3389	-113.7958
44	33.2881	-113.6519
53	33.0339	-113.6519
57	32.7794	-114.3211
58	32.8642	-114.318
59	32.8642	-114.061
60	32.7794	-114.064

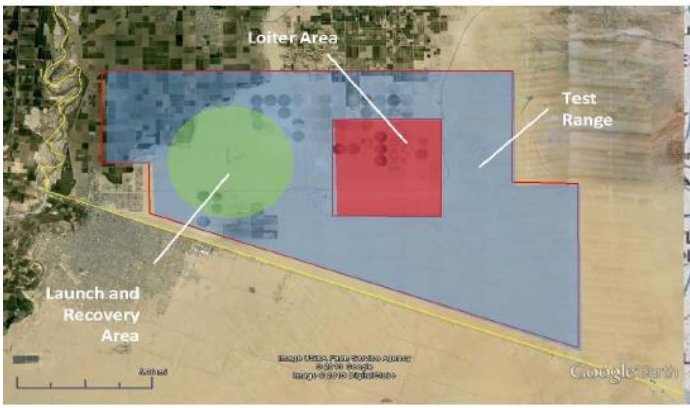
Notes:
1) The YPG Test Range is accessed through the Yuma Test Range.
2) The YPG UAS Test Range is overlaid on top of R-2306, 2307, 2308, and 2311 restricted airspace.
3) All coordinates are approximate; please refer to official active sectional charts for exact internal and external boundaries .
4) Lost link areas will be designated in coordination with YPG range authority prior to each operation.

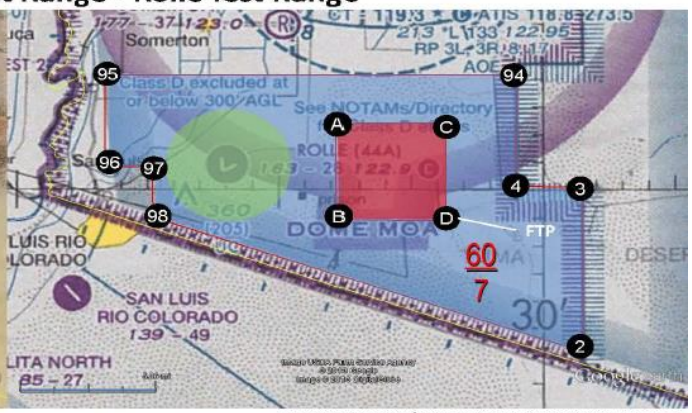


Airspace projection seen from the south

Param.	Typical Range	Param.	Typical Range
Weight	0 – 20,000 lbs	Type	Fixed wing, rotorcraft
Speed	0 – 250 knots	Hours	24x7, SR/SS, 600/2200

AzTRC Southwest Range - Rolle Test Range



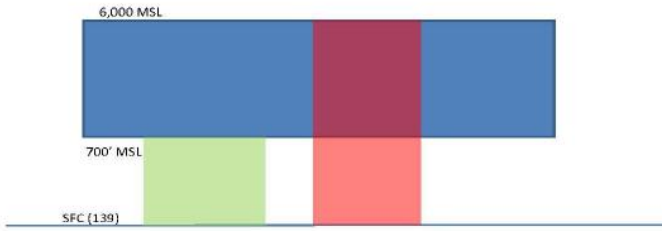


Phoenix Sectional 88th edition, effective Oct 2012 thru May 2013

Test Range Airspace		
2	32.3897	-114.4758
3	32.4929	-114.4758
4	32.4929	-114.5175
94	32.5672	-114.5175
95	32.5672	-114.7781
96	32.5083	-114.7781
97	32.5083	-114.7478
98	32.4744	-114.7478

Loiter Area 1		
A	32.5382	-114.6311
B	32.4802	-114.6311
C	32.4802	-114.5625
D	32.5382	-114.5625

Launch & Recovery
2 NM radius centered on Rolle Airfield (44A)

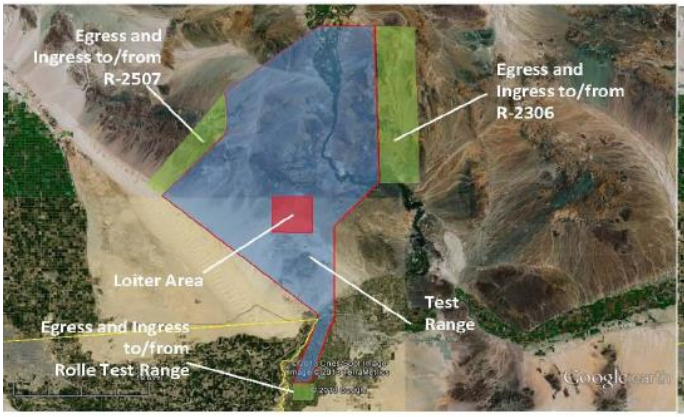


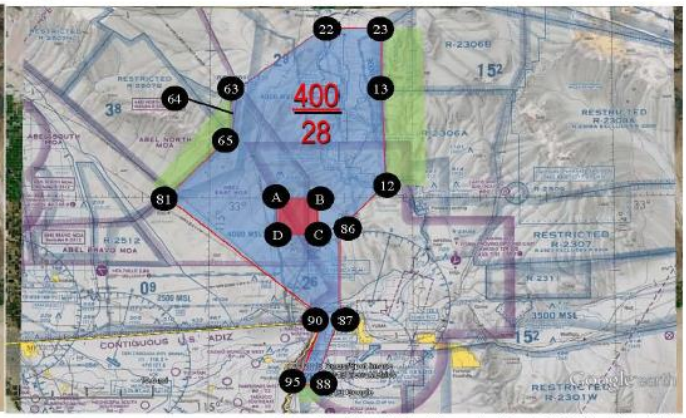
Airspace projection seen from the south

Param.	Typical Range	Param.	Typical Range
Weight	0 – 20,000 lbs	Type	Fixed wing, rotorcraft
Speed	0 – 250 knots	Hours	24x7

Source: Arizona Commerce Authority (ACA - http://www.azcommerce.com/)

AzTRC Southwest Test Range – Yuma Test Range



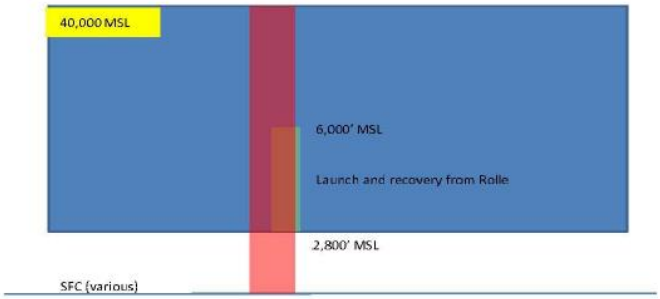


Phoenix Sectional 88th edition, effective Oct 2012 thru May 2013

Test Range Airspace		
23	33.3780	-114.5778
13	33.2435	-114.5796
12	33.0339	-114.5675
86	32.9319	-114.6800
87	32.7286	-114.6800
88	32.5761	-114.7378
95	32.5761	-114.7781
90	32.7286	-114.7164
81	33.0093	-115.1007
65	33.1394	-114.9428

Test Range Airspace		
64	33.1742	-114.9399
63	33.2384	-114.9479
22	33.3780	-114.7102
Lost Link Area		
A	33.0000	-114.8333
B	33.0000	-114.7333
C	32.9167	-114.7333
D	32.9167	-114.8333

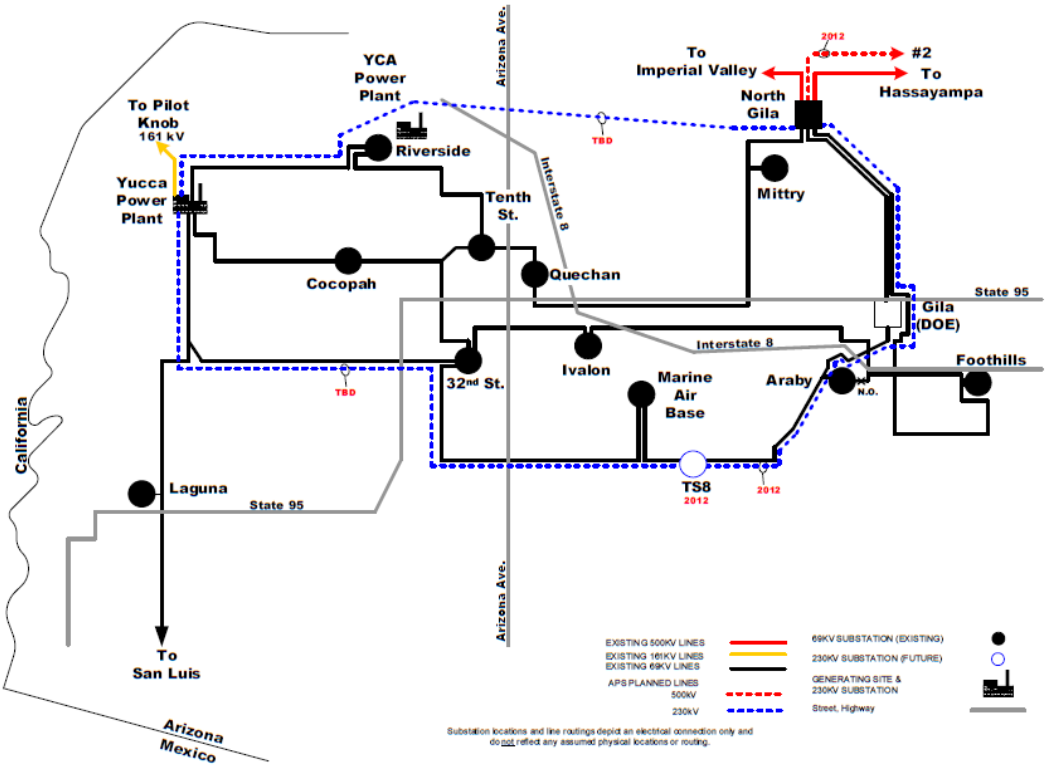
The Yuma Test Range is accessed from the Rolle Test Range. It also connects to the Chocolate Mountains and YPG Ranges.



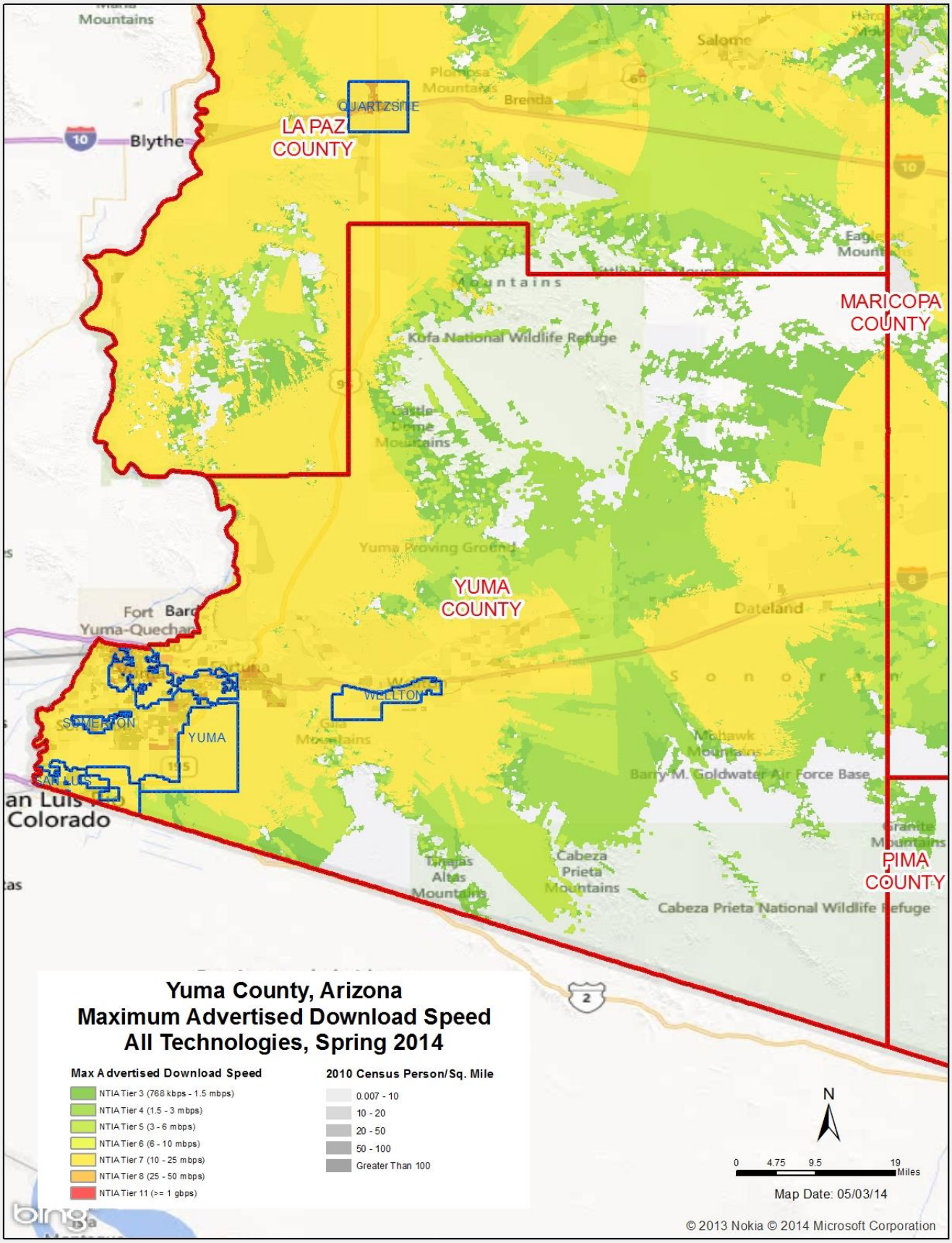
Airspace projection seen from the south

Param.	Typical Range	Param.	Typical Range
Weight	0 – 20,000 lbs	Type	Fixed wing, rotorcraft
Speed	0 – 250 knots	Hours	24x7

Arizona Public Service (APS)
Yuma Area Transmission Map 2008-17



Source: Arizona Corporation Commission (http://www.azcc.gov/divisions/utilities/electric.asp)


LA PAZ COUNTY
MARICOPA COUNTY
YUMA COUNTY
PIMA COUNTY
QUARTZSITE
Blythe
YUMA
WELLTON
SOMERTON
Yuma Proving Ground
Kofa National Wildlife Refuge
Cabeza Prieta National Wildlife Refuge
Barry M. Goldwater Air Force Base
Yuma County, Arizona
Maximum Advertised Download Speed
All Technologies, Spring 2014
Max Advertised Download Speed
NTIA Tier 3 (768 kbps - 1.5 mbps)
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 6 (6 - 10 mbps)
NTIA Tier 7 (10 - 25 mbps)
NTIA Tier 8 (25 - 50 mbps)
NTIA Tier 11 (>= 1 gbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
N
0 4.75 9.5 19 Miles
Map Date: 05/03/14
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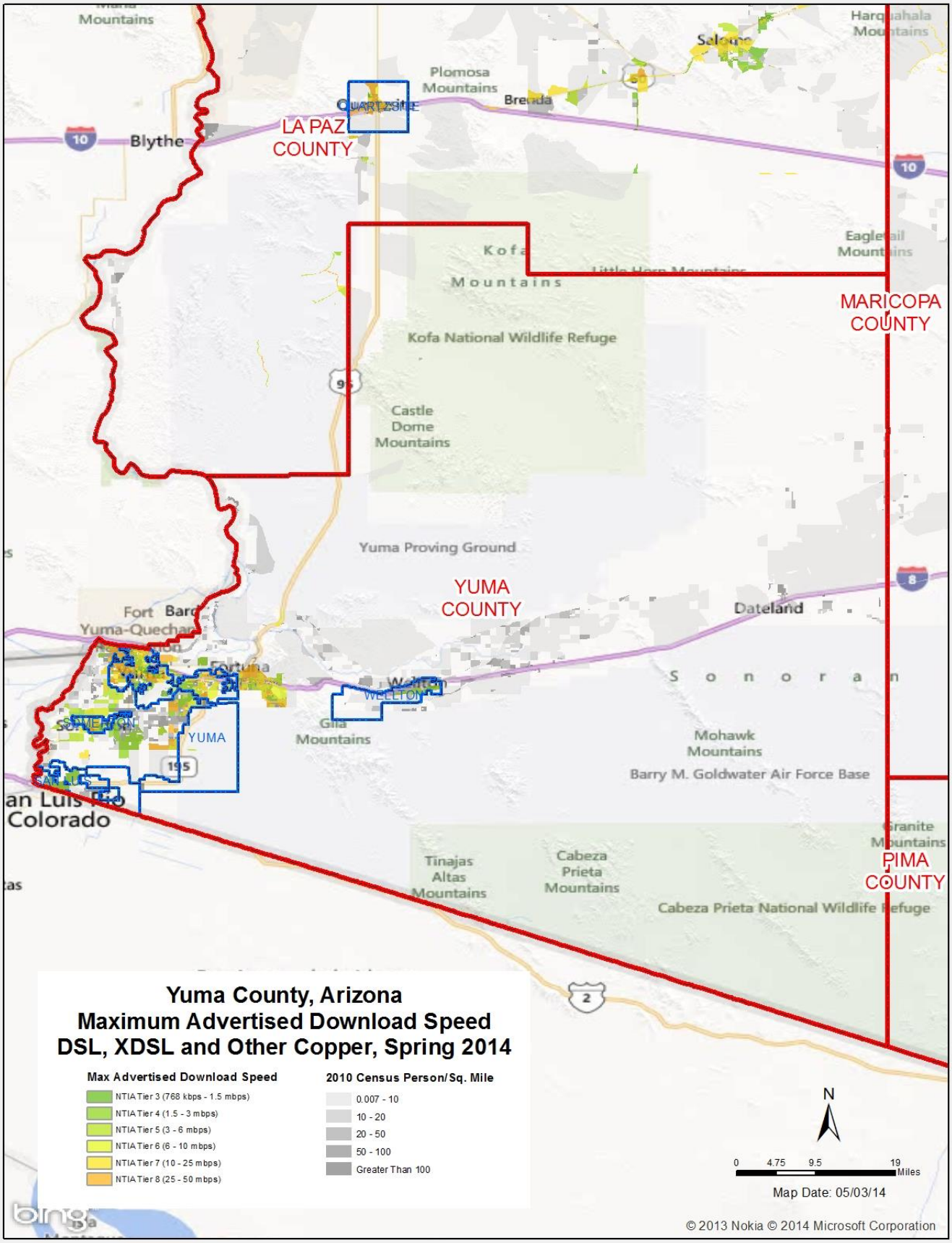
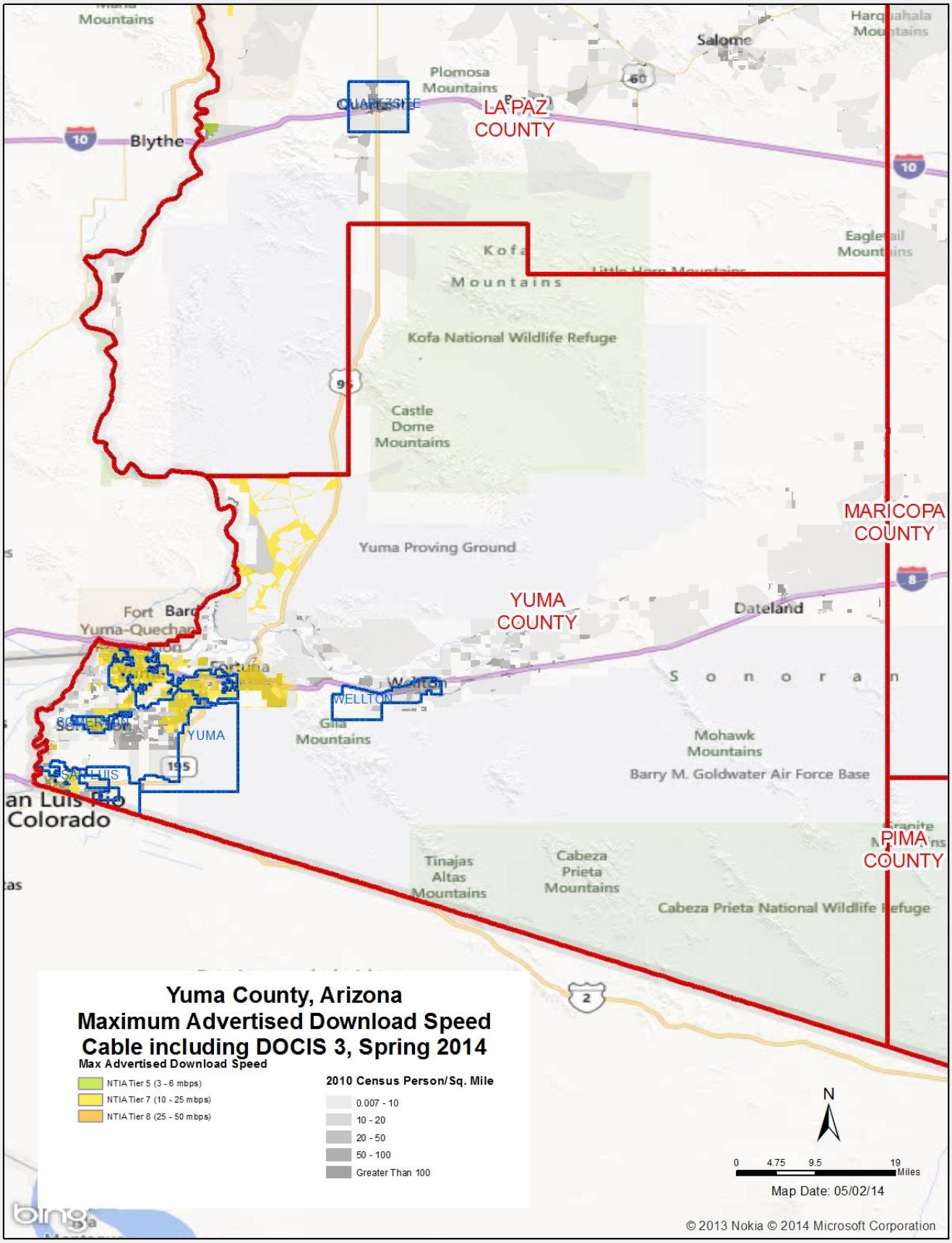

LA PAZ COUNTY
MARICOPA COUNTY
YUMA COUNTY
PIMA COUNTY
Blythe
Plomosa Mountains
Kofa Mountains
Kofa National Wildlife Refuge
Castle Dome Mountains
Yuma Proving Ground
Dateland
Sonoran
Gila Mountains
Mohawk Mountains
Barry M. Goldwater Air Force Base
Tinajas Altas Mountains
Cabeza Prieta Mountains
Cabeza Prieta National Wildlife Refuge
Granite Mountains
YUMA
Colorado
Yuma County, Arizona
Maximum Advertised Download Speed
DSL, XDSL and Other Copper, Spring 2014
Max Advertised Download Speed
NTIA Tier 3 (768 kbps - 1.5 mbps)
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 6 (6 - 10 mbps)
NTIA Tier 7 (10 - 25 mbps)
NTIA Tier 8 (25 - 50 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
N
0 4.75 9.5 19 Miles
Map Date: 05/03/14
© 2013 Nokia © 2014 Microsoft Corporation


Yuma County, Arizona
Maximum Advertised Download Speed
Cable including DOCIS 3, Spring 2014
Max Advertised Download Speed
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 7 (10 - 25 mbps)
NTIA Tier 8 (25 - 50 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
LA PAZ COUNTY
MARICOPA COUNTY
YUMA COUNTY
PIMA COUNTY
QUARTZSITE
WELLTON
YUMA
SAN LUIS
Blythe
Salome
Plomosa Mountains
Kofa Mountains
Kofa National Wildlife Refuge
Castle Dome Mountains
Yuma Proving Ground
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Mohawk Mountains
Barry M. Goldwater Air Force Base
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Cabeza Prieta Mountains
Cabeza Prieta National Wildlife Refuge
Colorado
N
0 4.75 9.5 19 Miles
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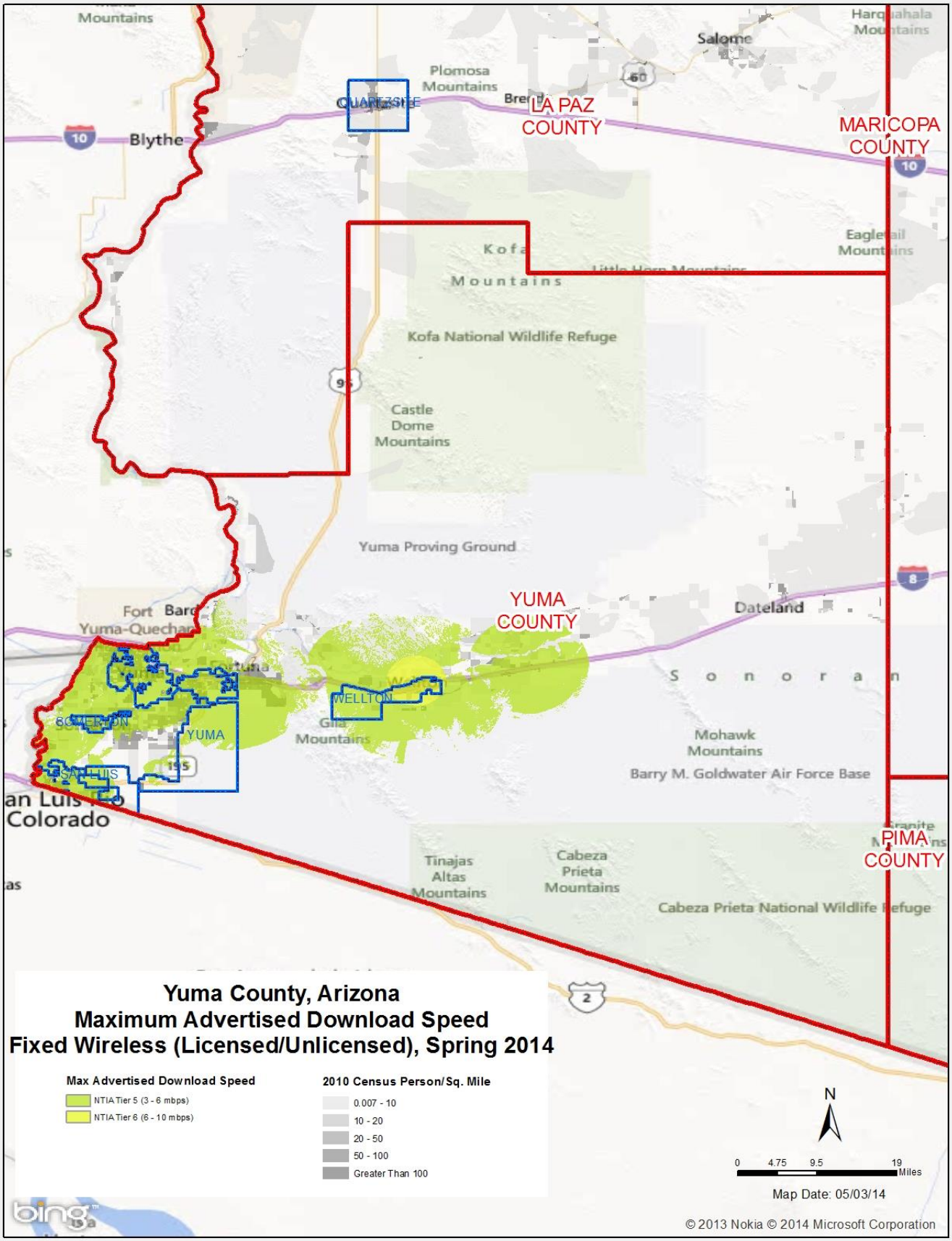
Yuma County, Arizona
Maximum Advertised Download Speed
Fixed Wireless (Licensed/Unlicensed), Spring 2014
Max Advertised Download Speed
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 6 (6 - 10 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
N
0 4.75 9.5 19 Miles
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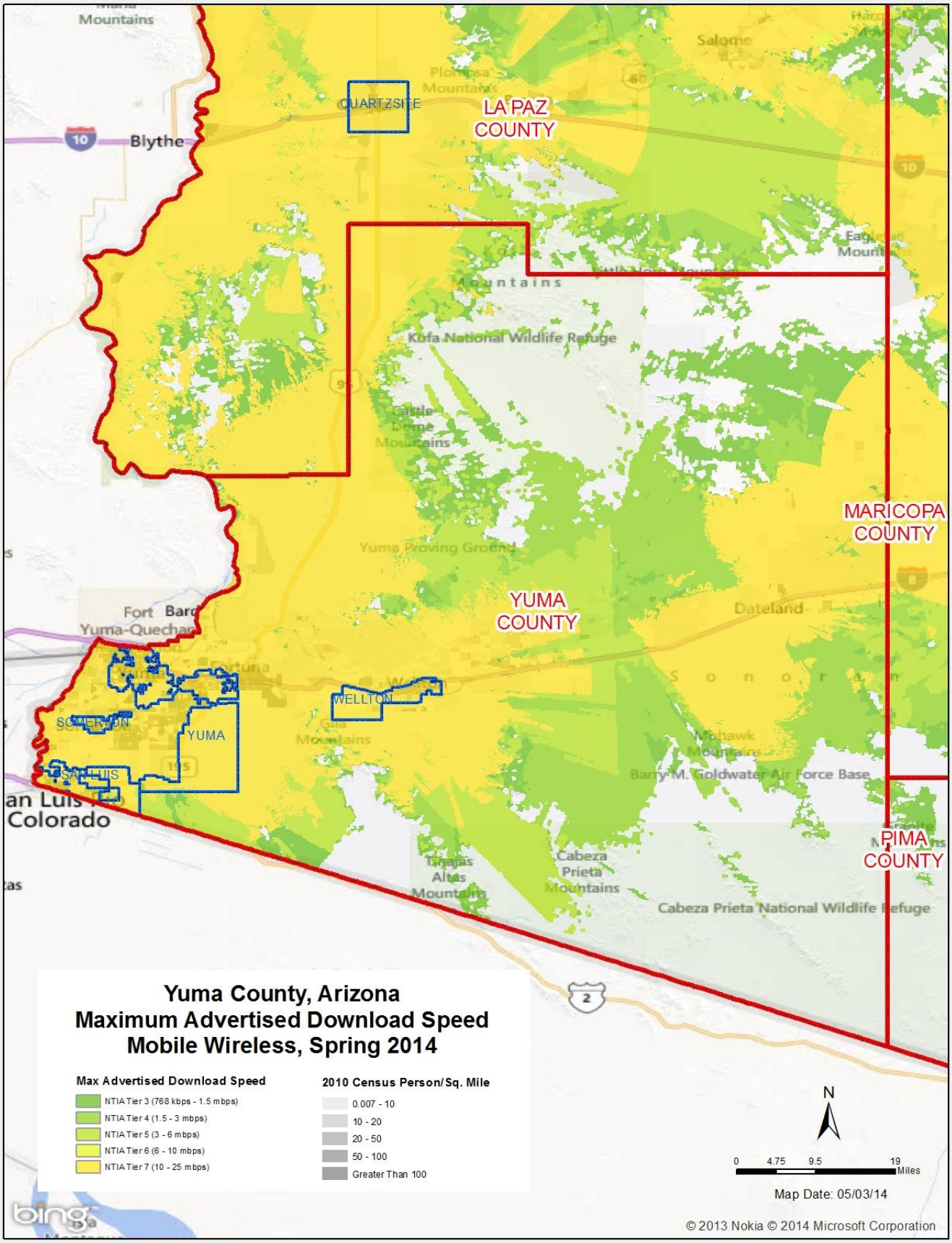
WELLTON
YUMA
SOMERTON
SAN LUIS
Colorado


Yuma County, Arizona
Maximum Advertised Download Speed
Mobile Wireless, Spring 2014
Max Advertised Download Speed
NTIA Tier 3 (768 kbps - 1.5 mbps)
NTIA Tier 4 (1.5 - 3 mbps)
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NTIA Tier 6 (6 - 10 mbps)
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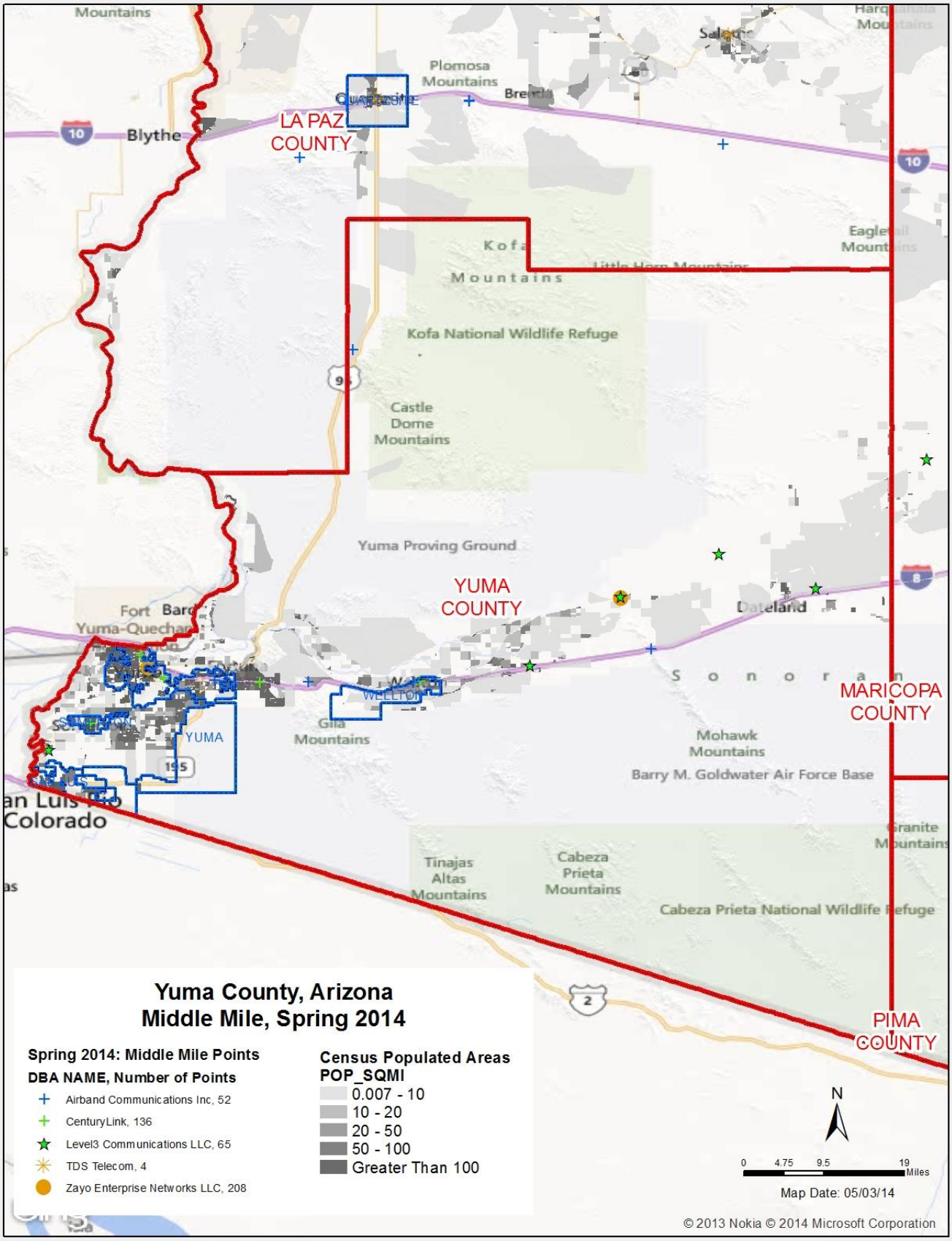
Yuma County, Arizona
Middle Mile, Spring 2014
Spring 2014: Middle Mile Points
DBA NAME, Number of Points
Airband Communications Inc, 52
CenturyLink, 136
Level3 Communications LLC, 65
TDS Telecom, 4
Zayo Enterprise Networks LLC, 208
Census Populated Areas
POP_SQMI
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
N
0 4.75 9.5 19
Miles
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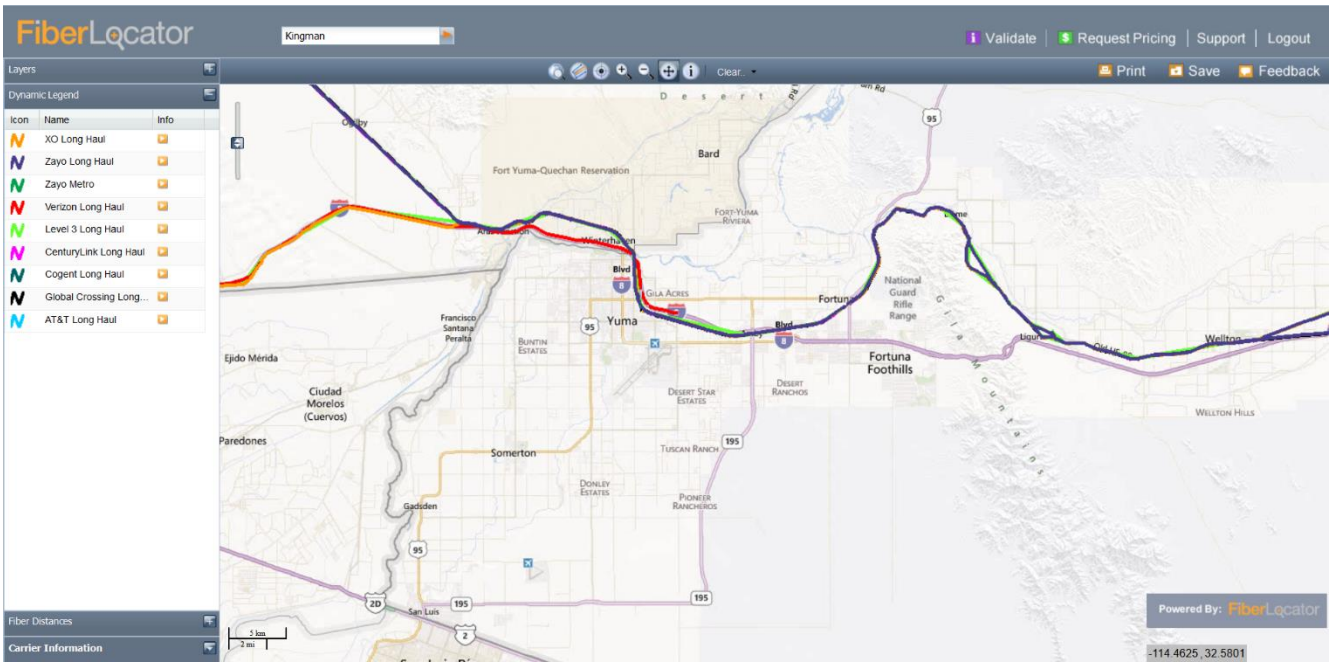
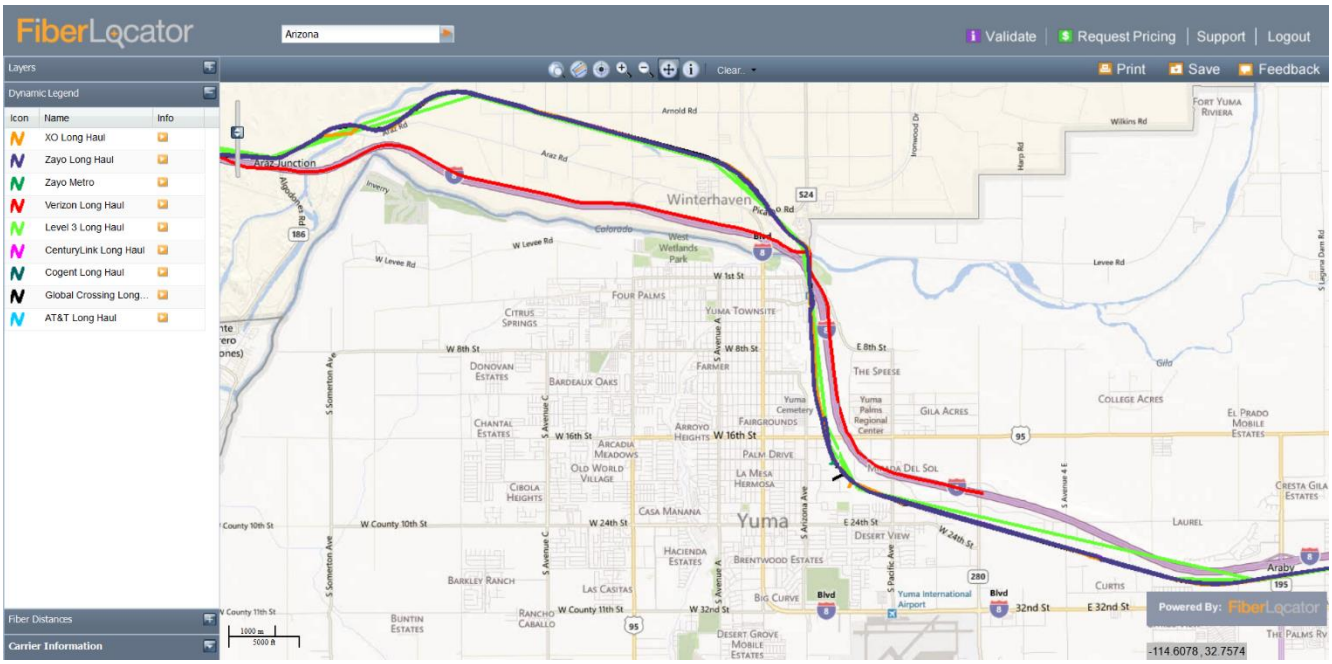
Colorado
Sonoran

City of Yuma Area Selective Fiber Maps



City of Yuma Detail Selective Fiber Maps



Source: NEF FiberLocator (http://www.fiberlocator.com/)

Yuma County Broadband Coverage for Spring 2014

	Yuma County		State of Arizona	
All Broadband Tech (Except Satellite)	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	100.00%	100.00%	99.55%	99.56%
≥ 3 Mbps Down	99.92%	99.92%	98.80%	98.59%
≥ 6 Mbps Down	99.87%	99.86%	98.32%	98.19%
≥ 10 Mbps Down	99.87%	99.86%	97.70%	97.41%
DSL, xDSL & Other Copper Tech	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	76.16%	69.97%	93.65%	93.33%
≥ 3 Mbps Down	57.13%	54.09%	89.03%	88.29%
≥ 6 Mbps Down	48.99%	46.72%	82.36%	81.09%
≥ 10 Mbps Down	36.57%	34.55%	73.90%	72.46%
Cable Modem Technologies	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	82.36%	83.25%	89.25%	88.66%
≥ 3 Mbps Down	82.36%	83.25%	89.03%	88.41%
≥ 6 Mbps Down	82.36%	83.25%	88.95%	88.34%
≥ 10 Mbps Down	82.36%	83.25%	88.95%	88.34%
Fixed Wireless Technologies	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	95.01%	95.83%	94.68%	94.39%
≥ 3 Mbps Down	95.01%	95.83%	62.00%	62.87%
≥ 6 Mbps Down	1.62%	2.56%	53.70%	54.57%
≥ 10 Mbps Down	0.00%	0.00%	5.85%	5.85%
Mobile Wireless Technologies	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	100.00%	100.00%	98.87%	99.01%
≥ 3 Mbps Down	99.92%	99.92%	97.46%	97.26%
≥ 6 Mbps Down	99.87%	99.86%	97.13%	96.79%
≥ 10 Mbps Down	99.87%	99.86%	97.13%	96.79%
	Population Count	**Household Count**	**Population Count**	**Household Count**
County Totals (2010 Census)	195,751	87,850	**6,392,017**	**2,844,526**

Notes: Data presented in table above is as collected by the State of Arizona for the NTIA and FCC broadband maps and submitted in Spring 2014 for Broadband Provider (BP) coverage declared as of 12/31/13. Population across Census Blocks and in proximity to Road Segments are based on calculations utilizing U.S. Census 2010 data.

Yuma County Broadband Providers (14)

Broadband Provider	Service Type	Advertised Download Speed	Advertised Upload Speed	Download Speed Tier	Upload Speed Tier
Airband	Fixed Wireless	6 - 10 Mbps	1.5 - 3 Mbps	6	4
AT&T Mobility	Mobile Wireless	1.5 - 3 Mbps	768 Kbps - 1.5 Mbps	4	3
		3 - 6 Mbps	3 - 6 Mbps	5	5
Beamspeed	Fixed Wireless	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
CenturyLink	DSL (Asymmetric)	1.5 - 3 Mbps	768 Kbps - 1.5 Mbps	4	3
		3 - 6 Mbps	200 - 768 Kbps	5	2
		3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
		6 - 10 Mbps	768 Kbps - 1.5 Mbps	6	3
		10 - 25 Mbps	768 Kbps - 1.5 Mbps	7	3
		25 - 50 Mbps	3 - 6 Mbps	8	5
		25 - 50 Mbps	10 - 25 Mbps	8	7
Frontier Southwest	DSL (Asymmetric)	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
		10 - 25 Mbps	1.5 - 3 Mbps	7	4
		25 - 50 Mbps	3 - 6 Mbps	8	5
HNS (Hughes, Echostar)	Satellite	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
		10 - 25 Mbps	1.5 - 3 Mbps	7	4
Level 3 Communications	Fiber	> 1 Gbps	> 1 Gbps	11	11
Skycasters (VSAT Systems)	Satellite	6 - 10 Mbps	1.5 - 3 Mbps	6	4
Sprint Communications	Mobile Wireless	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
StarBand Communications	Satellite	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
TDS Telecom	DSL (Asymmetric)	10 - 25 Mbps	768 Kbps - 1.5 Mbps	7	3
Time Warner Cable	Cable	10 - 25 Mbps	1.5 - 3 Mbps	7	4
Verizon Communications	Mobile Wireless	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
ViaSat	Satellite	1.5 - 3 Mbps	200 - 768 Kbps	4	2
		3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3

WACOG Broadband BCA Round 2

Town of Parker/La Paz County Focus Area (Region 3)

The Town of Parker, county seat of La Paz County and the County itself are extremely underserved (very limited if any DSL, cable or fixed wireless broadband for example) and thus a good target and a prime example of underserved population centers to develop strategy and tactics about.

- La Paz County represents by far the area with the most severe broadband deficit in Arizona and represents one of the most underserved regions of the nation. The State submitted a recent formal expression of interest in participating in the Rural Broadband Trials under the Connect America Fund (CAF) including a project in La Paz County implementing the Digital Arizona Tactical Model utilizing highway ROW fiber, towers, and high capacity point-to-point and point-to-multipoint wireless to connect key community anchor points. This path should be a prime focus and pursuit for accelerating regional broadband availability and capabilities.
- There remains limited DSL and Cable Modem broadband coverage and delivery speeds. Community and stakeholders need to demonstrate aggregate demand and future growth to existing broadband providers seeking further investment over time.
- Frontier especially is making strategic investments in incremental fiber and DSL as well as Ethernet service offerings. Good dialogue has been ongoing between economic development stakeholders and selective broadband providers which should be pursued and leveraged going forward.
- GovNet will bring higher level services to a good number of institutions in the education, healthcare, and government arenas as its deployment matures. This will represent the available bandwidth of first and last resort for many of the isolated Community Anchor Institutions and thus a great improvement in availability, but remains an intermediate step due to limited carrying capacities.
- There is community interest in a possible open wireless project where a public network is established over meshed network elements. Primarily, Wi-Fi access points would be securely shared by existing broadband customers (residential, businesses, anchor institutions) with public users and wireless bridges or other connectivity employed to bridge Wi-Fi clusters if and where needed. See https://openwireless.org/.
- Municipal and county government agencies should cooperate in reviewing and where possible streamlining permitting and ROW access, as well as wireless asset siting following available models and best practices for possible adoption.

The towns of Parker and Quartzsite are the main population centers, as well as the main business areas for residents and winter visitors. The county's rugged landscape and the Colorado River attract tens of thousands of visitors annually, making tourism the number one industry with tourism revenues north of $100 million. Quartzsite is known for its winter season gem and mineral shows with more than 1 million visitors coming to the community each year to take part.

La Paz County's present broadband infrastructure and services availability is quite simply grossly inadequate for the current needs for the vast majority of the county's residences, enterprises, and institutions, by far the county with the most severe broadband deficit in Arizona and one of the most underserved regions of the nation. Community Anchor

Institutions (CAIs) across education, healthcare, and public safety, among others have substantial broadband constraints and access issues without satisfactory solutions. In summary:

- Only 30.7% of the population has access to DSL services with speeds ≥ 768 Kbps down. For DSL services ≥ 6 Mbps down a scant 18.9% of La Paz residents have access. Frontier is making strategic investments in incremental fiber and DSL as well as Ethernet service offerings. They indicate efforts to bring 50 Mbps service to most K-12 schools utilizing fiber wherever possible.

- Only 28.8% of the population has access to cable modem services with speeds ≥ 768 Kbps. For cable modem services ≥ 6 Mbps down only 23.8% of La Paz residents have access. TW Cable is making some investment in augmenting and expanding services.

- Virtually none of La Paz County's population (.05%) has access to fixed wireless services at any speed.

- While mobile wireless services with speeds ≥ 768 Kbps down do reach virtually all of La Paz County residents, at speeds of ≥ 6 Mbps down only 36.6% of residents have access. Though mobile wireless coverage and speeds are bound to keep improving as all major providers migrate to LTE nationwide, the area will continue to lag most.

La Paz County Health Department (LPCHD) has launched the Health LA PAZ project (http://www.lpchd.com/healthy-la-paz.html), a community coalition that focuses on improved health in La Paz County. Using the Mobilizing for Action through Planning and Partnerships (MAPP) model, LPCHD invited a broad coalition of key community leaders in multiple sectors to participate in strategic planning to improve the public's health. This process led to the creation of a Community Health Improvement Plan (CHIP) which will serve as a foundation for the upcoming action cycle where broadband is recognized and valued as an essential component of healthcare delivery and excellence.

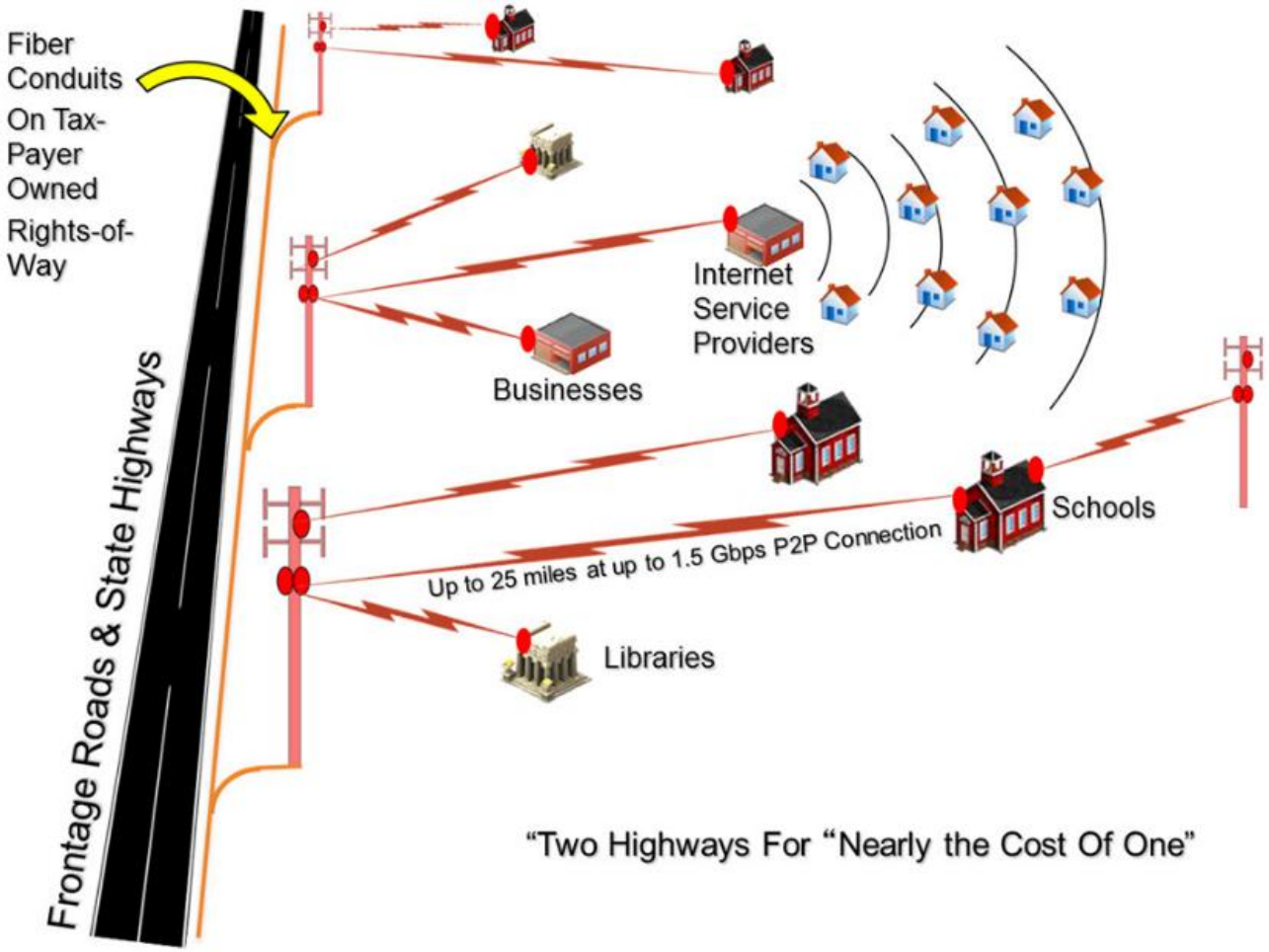
IRC worked with ASET on the State's recent formal expression of interest in participating in the **Rural Broadband Trials** under the **Connect America Fund (CAF)**. ASET identified and offered two separate projects each designed to meet a critical and worthy Arizona broadband need and to provide opportunities suitable for experimental treatment. One of these was for a proposed project in La Paz County implementing the Digital Arizona Tactical Model utilizing highway ROW fiber, towers, and high capacity point-to-point and point-to-multipoint wireless to connect key community anchor points, a multifaceted approach deemed experimental in its breadth and interrelationship of elements as follows:

- Support middle mile fiber deployments by long haul and other providers along State highways under a highway conduit initiative enabled by State legislation (SB1402) redefining transportation to include the transportation of information. The program is structured to operate on a cost recovery basis and insure fiber network access points for communities are made available along the routes.

- Develop and deploy successive elements of the Digital Arizona Tactical Model by leveraging the synergies of expanded K-12 and higher education under state and federal programs, the dynamic Arizona telemedicine infrastructure, and the evolving FirstNet public safety broadband network. This is expected to create and open up an inventory of fiber-fed wireless towers from which mobile and fixed wireless broadband can be distributed to nearby communities and populations with high-speed point-to-point as well as point-to-multipoint distribution. See the illustration below.

- Engage multiple fixed wireless providers and encourage their investing in and deploying last mile high-capacity broadband service delivery capabilities with easy, cost effective access to vertical assets, backhaul, and community partnerships.
- Facilitate community and stakeholder broadband demand identification and aggregation to influence incumbent and competitive DSL and cable modem providers to invest and deploy new infrastructure to serve additional populated areas.
- Work with regional and municipal governments to adopt predictable best practices in ROW management and wireless asset placements to encourage deployment.

Digital Arizona Tactical Model Illustration



The State is already involving many core broadband stakeholders and CAIs through several key Executive Branch agencies and NTIA funded policy and technical consulting engagements. La Paz County stakeholders across economic development, education, healthcare, and public safety areas have been significantly engaged in a regional Western Arizona Council of Governments (WACOG) Broadband Steering Committee for over a year and particularly education and healthcare CAIs have indicated their strong interest in participating in regional proposals and processes to help remediate their abiding issues with access to broadband. Further, a number of broadband providers have indicated their interest in partnering with the State in rural broadband trials under the Connect America Fund. Several providers are in negotiation with the Arizona Department of Transportation over possible use of State highway ROW for conduit and fiber deployment, a core element of the Digital Arizona Tactical Model.

Primary Focus Area Contacts:

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D.L. Wilson, Supervisor

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Alan Pruitt, Economic Development Director

Western Arizona Economic Development District (WAEDD - http://www.waedd.org/)
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Janice Shelton, County School Superintendent

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Technology & Network Services Department (TANS)
(http://www.azwestern.edu/information_technology/tss.html)
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Parker Public Library (http://www.parkerpubliclibraryaz.org/)
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Vickie Clark, CEO

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(https://www.facebook.com/LaPazCounty.HealthDepartment)
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Western Arizona Council of Governments (WACOG - http://www.wacog.com/)
(http://www.wacog.com/transportation_services.html)
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John Settles, Acting Department Head

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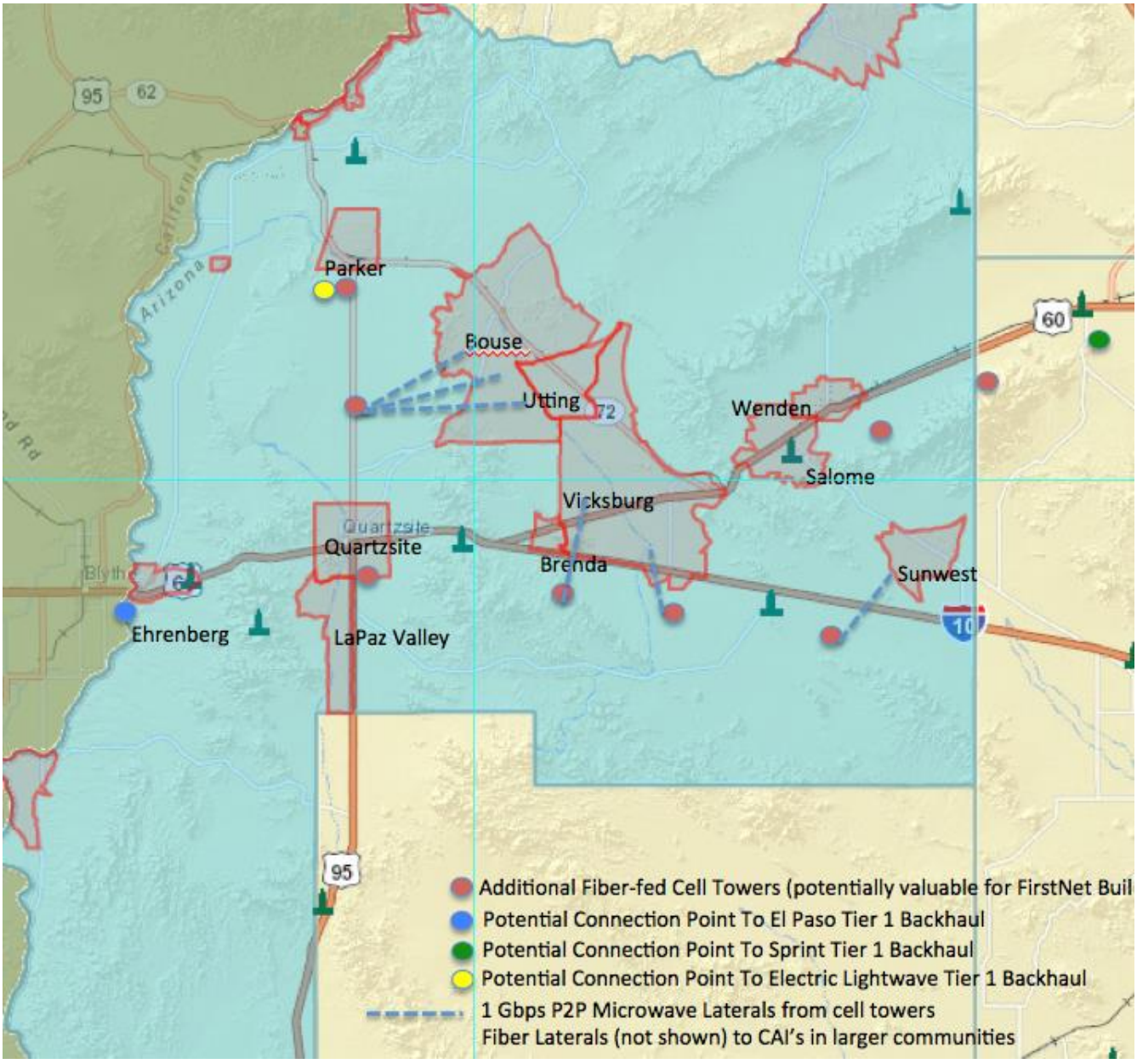
John C. Drum, La Paz County Sheriff

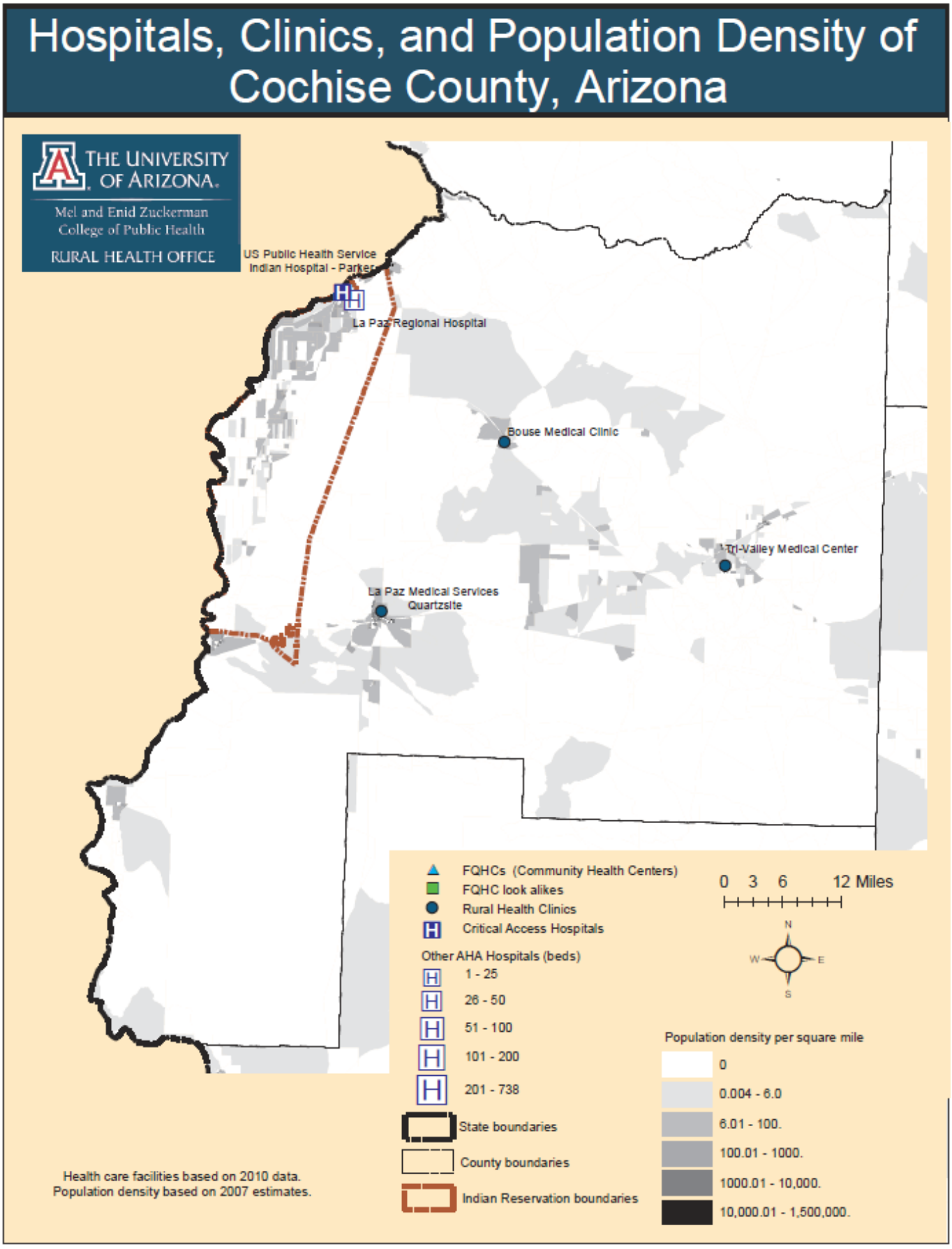
La Paz County Sheriff's Office (http://www.lapazsheriff.org/)
Phone: 928-669-6141, jdrum@lapazsheriff.org

Additional Town of Parker & La Paz County Information:

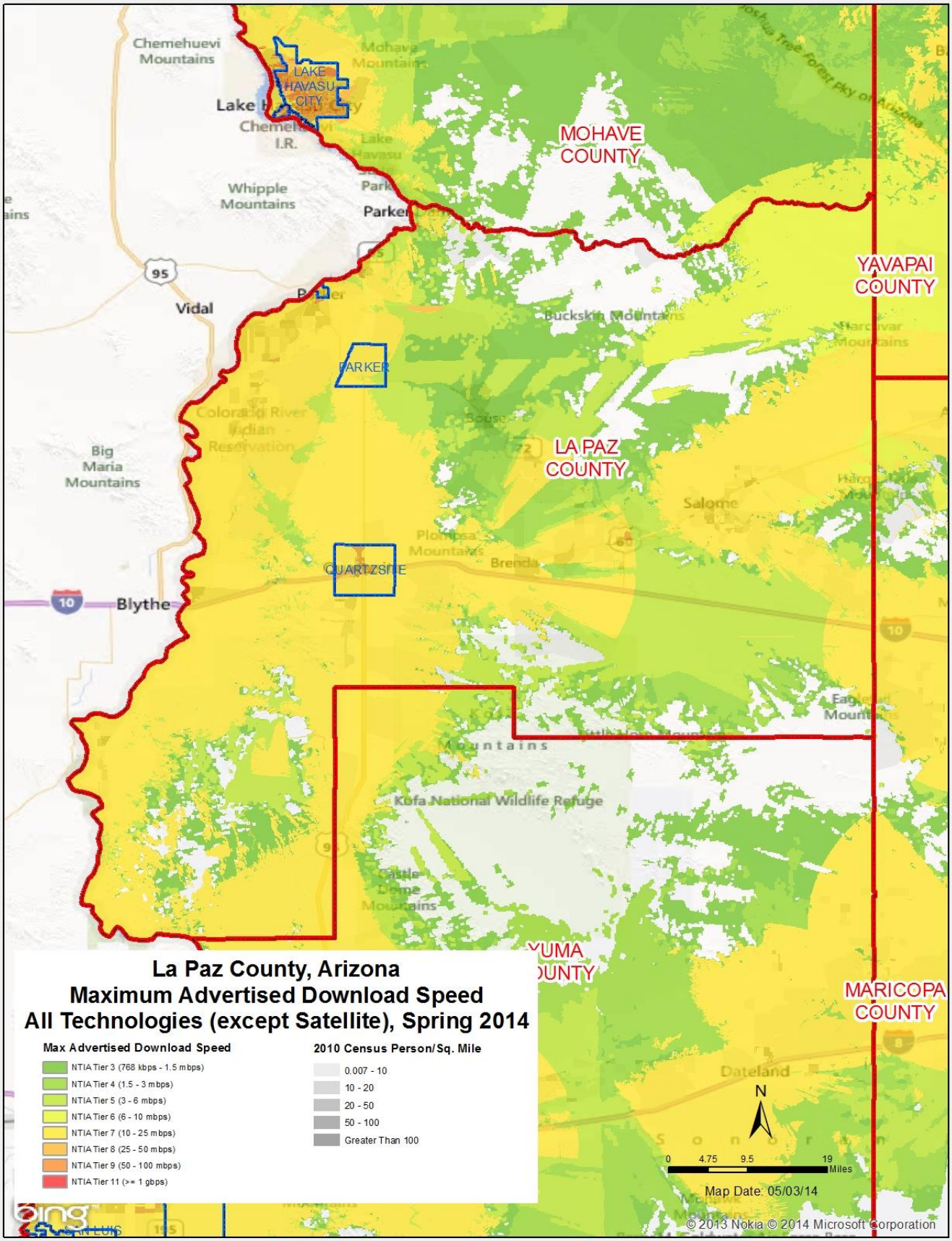
- La Paz County - http://www.co.la-paz.az.us/
- La Paz Economic Development Corp. - http://www.lapazedc.com/
- Parker Area Chamber of Commerce - http://www.parkeraz.org/
- Quartzsite Business Chamber of Commerce - http://www.quartzsitebusinesschamber.com/
- Yuma County Wikipedia Entry - http://en.wikipedia.org/wiki/La_Paz_County,_Arizona

ASET Digital Arizona Tactical Model La Paz County Concept





Note: Title is in error. Should be labelled **La Paz County** rather than Cochise County.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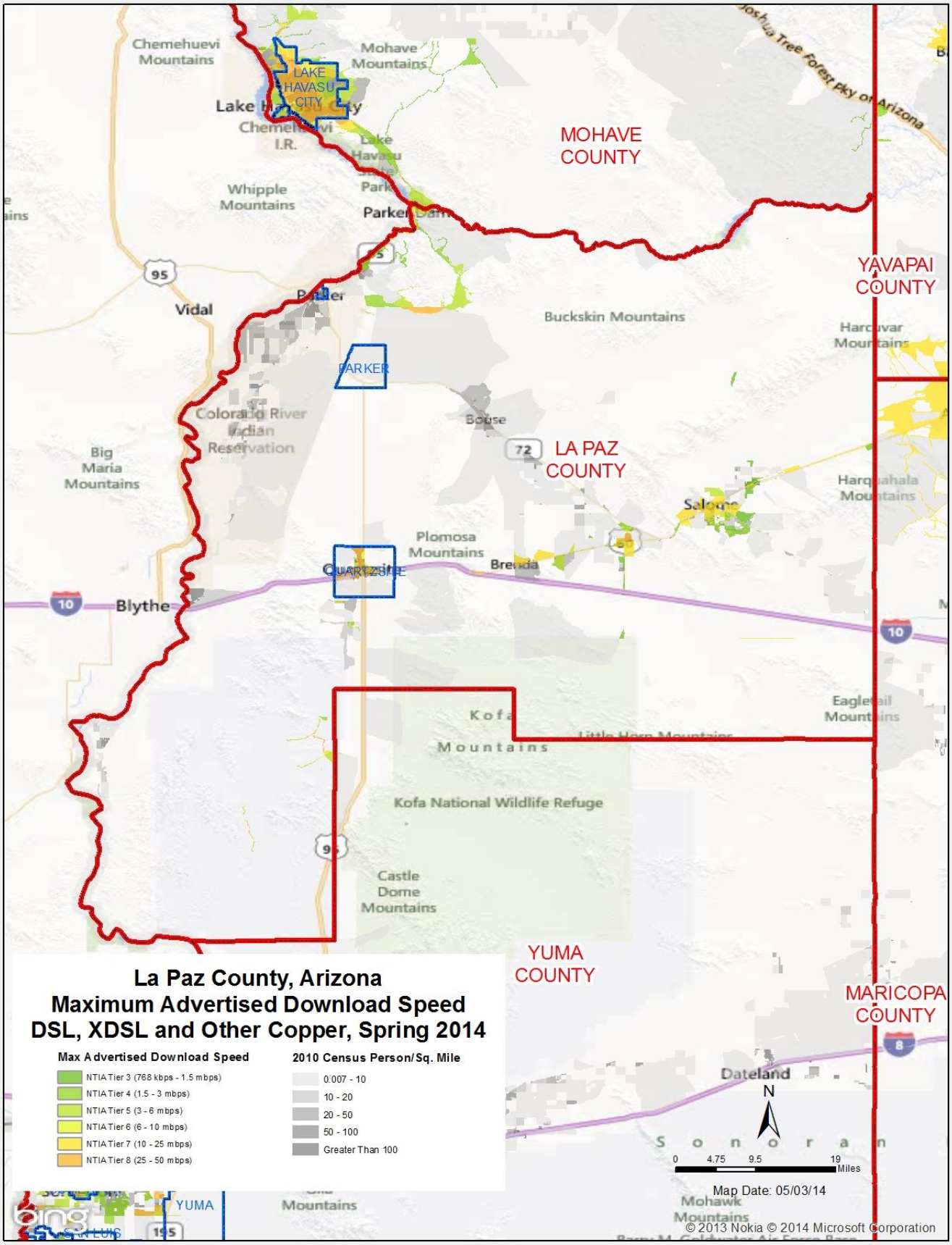
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Buckskin Mountains
Harcuvar Mountains
Harquahala Mountains
Big Maria Mountains
Plomosa Mountains
Eagletail Mountains
Mohawk Mountains
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Joshua Tree Forest Pkwy of Arizona
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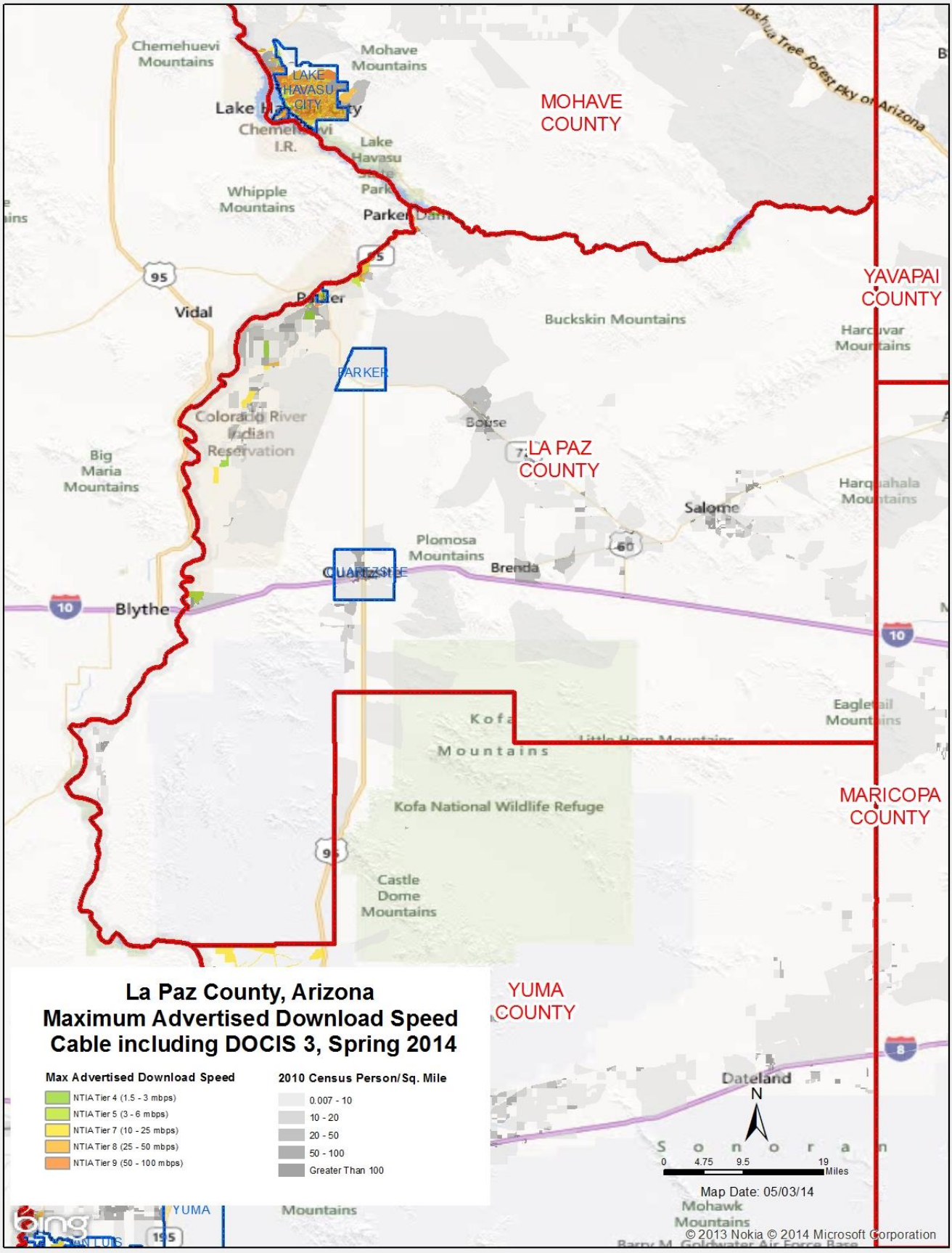
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Cable including DOCIS 3, Spring 2014
Max Advertised Download Speed
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 7 (10 - 25 mbps)
NTIA Tier 8 (25 - 50 mbps)
NTIA Tier 9 (50 - 100 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
MOHAVE COUNTY
YAVAPAI COUNTY
LA PAZ COUNTY
MARICOPA COUNTY
YUMA COUNTY
LAKE HAVASU CITY
PARKER
QUARTZSITE
Chemehuevi Mountains
Mohave Mountains
Whipple Mountains
Buckskin Mountains
Harcuvar Mountains
Big Maria Mountains
Plomosa Mountains
Kofa Mountains
Kofa National Wildlife Refuge
Castle Dome Mountains
Harquahala Mountains
Eagletail Mountains
Mohawk Mountains
Vidal
Blythe
Salome
Brenda
Bouse
Dateland
Joshua Tree Forest Pky of Arizona
N
0 4.75 9.5 19 Miles
Map Date: 05/03/14
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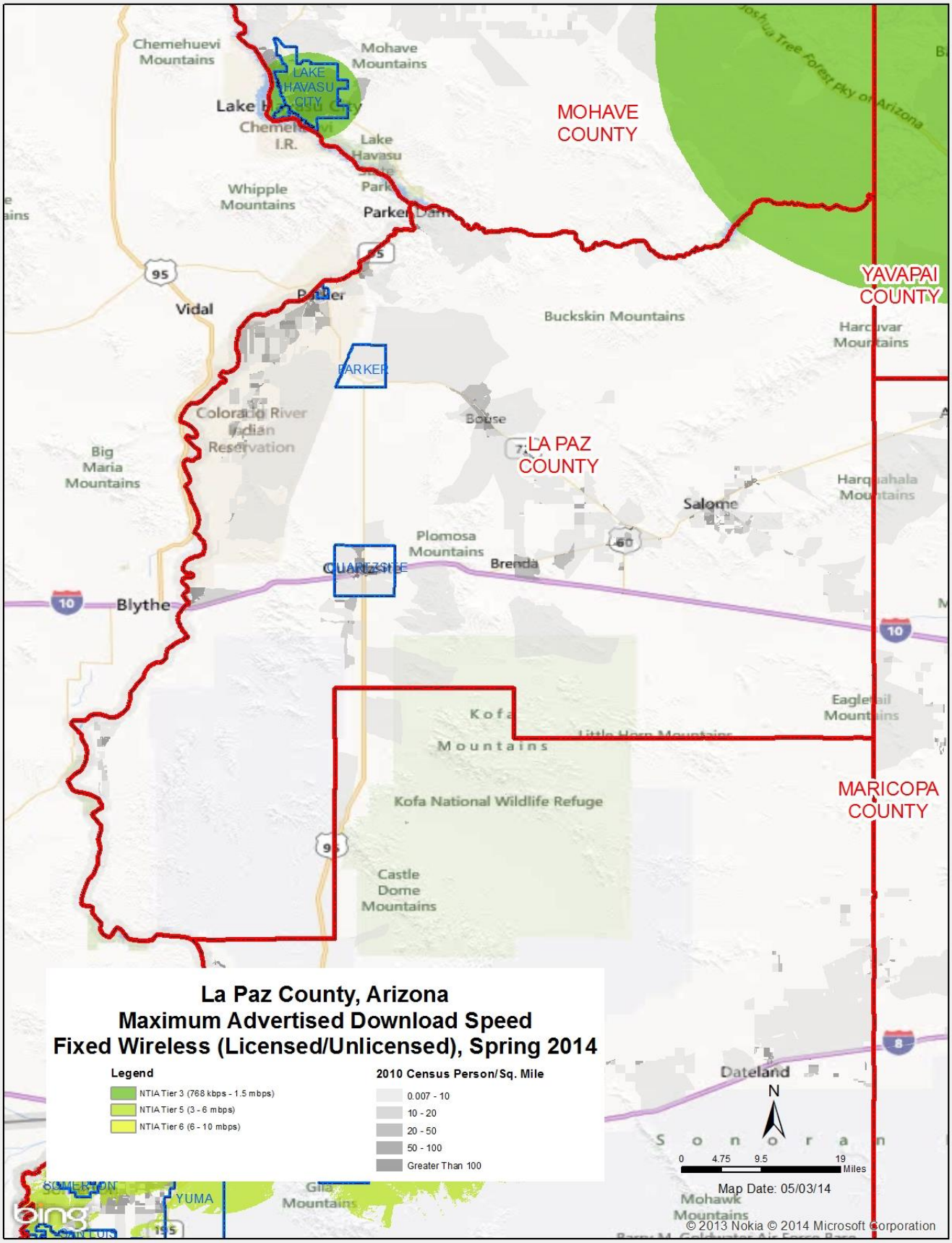
La Paz County, Arizona
Maximum Advertised Download Speed
Fixed Wireless (Licensed/Unlicensed), Spring 2014
Legend
NTIA Tier 3 (768 kbps - 1.5 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 6 (6 - 10 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
MOHAVE COUNTY
YAVAPAI COUNTY
LA PAZ COUNTY
MARICOPA COUNTY
Chemehuevi Mountains
Mohave Mountains
Lake Havasu City
Whipple Mountains
Parker Dam
Vidal
Buckskin Mountains
Harcuvar Mountains
PARKER
Colorado River Indian Reservation
Bouse
Big Maria Mountains
Salome
Harquahala Mountains
Plomosa Mountains
Brenda
QUARTZSITE
Blythe
Kofa Mountains
Kofa National Wildlife Refuge
Eagletail Mountains
Castle Dome Mountains
Dateland
Sonoran
Gila Mountains
Mohawk Mountains
YUMA
N
0 4.75 9.5 19
Miles
Map Date: 05/03/14
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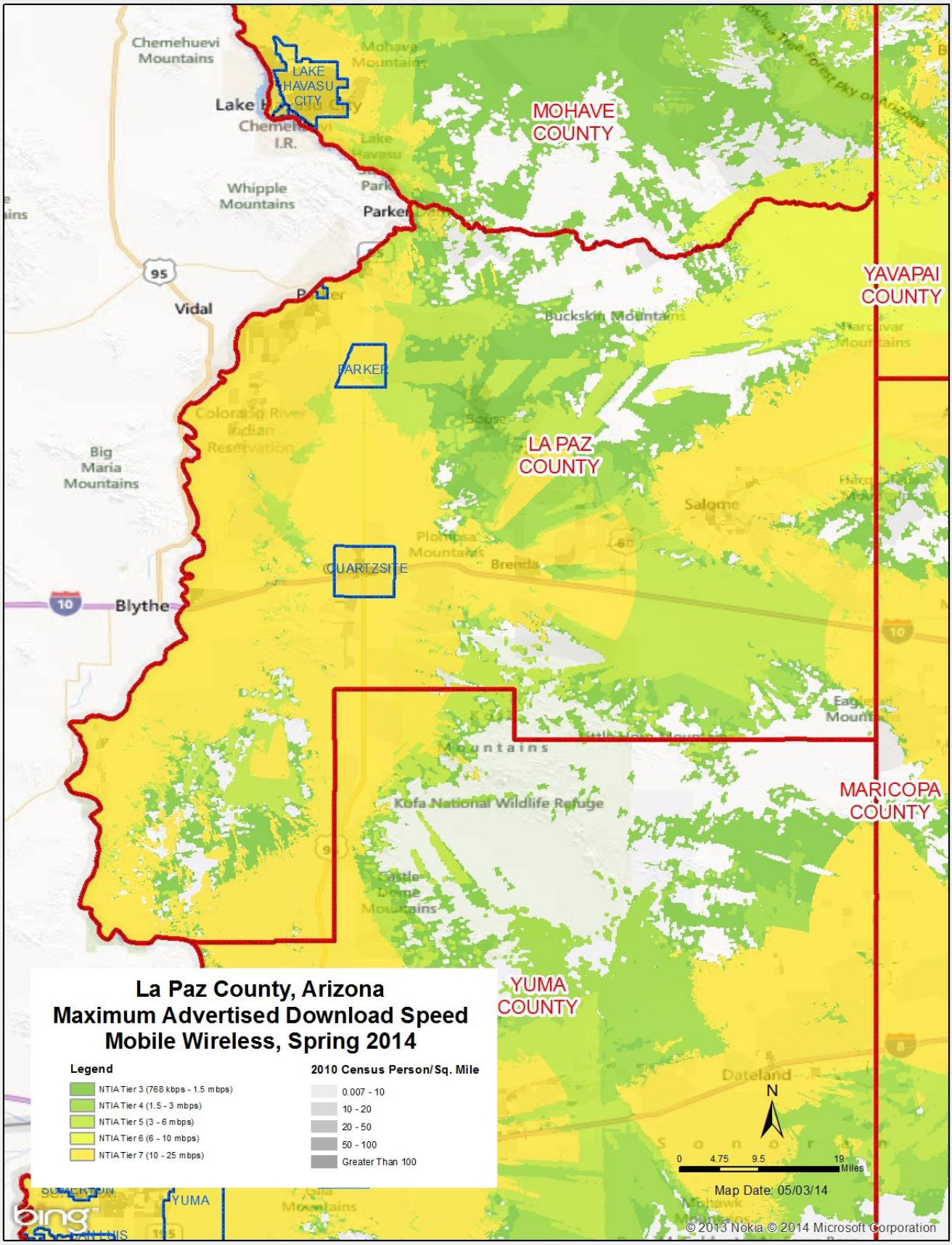
La Paz County, Arizona
Maximum Advertised Download Speed
Mobile Wireless, Spring 2014
Legend
NTIA Tier 3 (768 kbps - 1.5 mbps)
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 6 (6 - 10 mbps)
NTIA Tier 7 (10 - 25 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
MOHAVE COUNTY
YAVAPAI COUNTY
LA PAZ COUNTY
MARICOPA COUNTY
YUMA COUNTY
LAKE HAVASU CITY
PARKER
QUARTZSITE
Lake Havasu
Parker
Vidal
Blythe
Yuma
Chemehuevi Mountains
Whipple Mountains
Buckskin Mountains
Big Maria Mountains
Kofa National Wildlife Refuge
Salome
Brenda
Dateland
N
0 4.75 9.5 19 Miles
Map Date: 05/03/14
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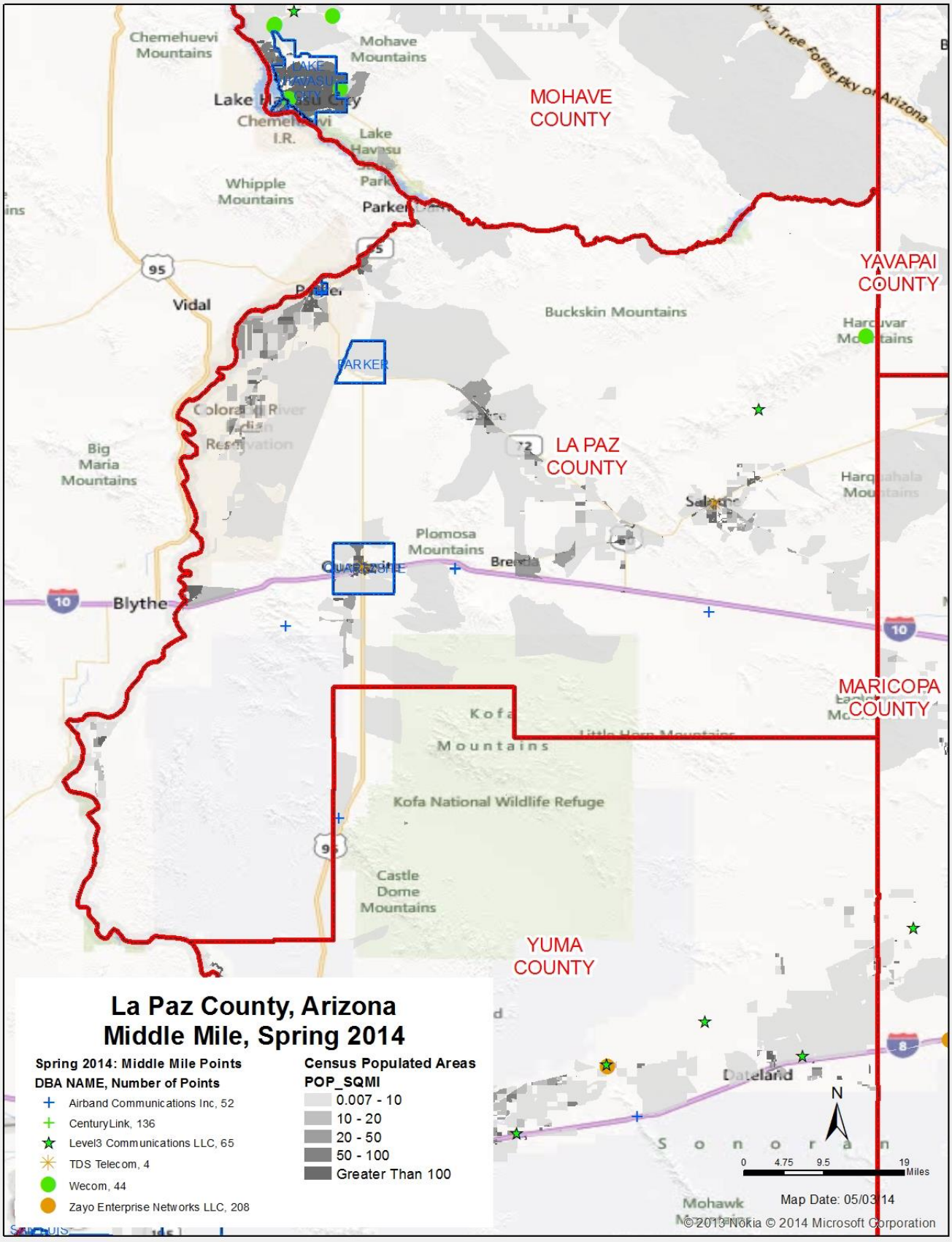
La Paz County, Arizona
Middle Mile, Spring 2014
Spring 2014: Middle Mile Points
DBA NAME, Number of Points
Airband Communications Inc, 52
CenturyLink, 136
Level3 Communications LLC, 65
TDS Telecom, 4
Wecom, 44
Zayo Enterprise Networks LLC, 208
Census Populated Areas
POP_SQMI
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
MOHAVE COUNTY
YAVAPAI COUNTY
LA PAZ COUNTY
MARICOPA COUNTY
YUMA COUNTY
PARKER
Chemehuevi Mountains
Mohave Mountains
Whipple Mountains
Buckskin Mountains
Big Maria Mountains
Plomosa Mountains
Kofa Mountains
Kofa National Wildlife Refuge
Castle Dome Mountains
Vidal
Blythe
Parker
Dateland
Sonoran
Mohawk
N
0 4.75 9.5 19 Miles
Map Date: 05/03/14
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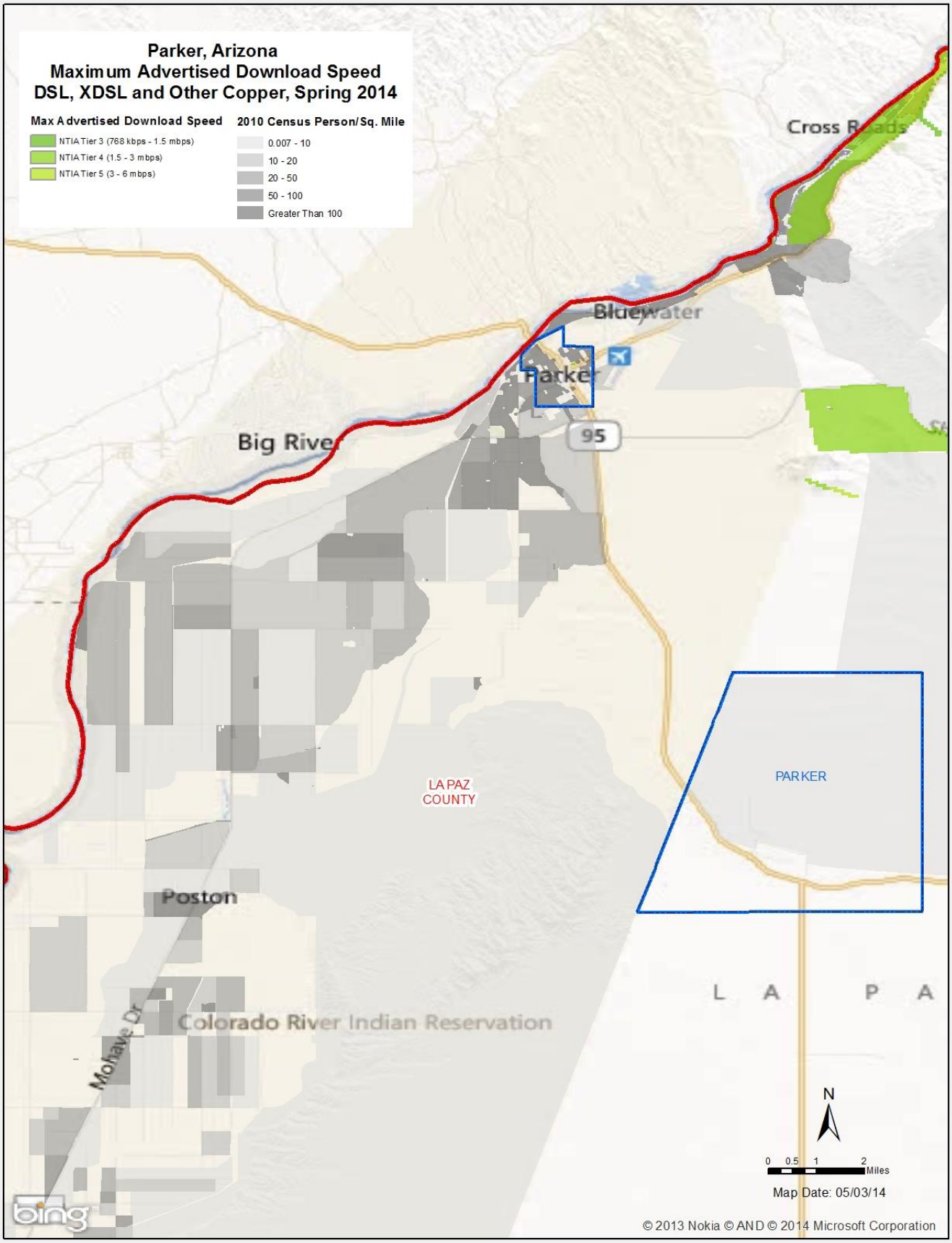
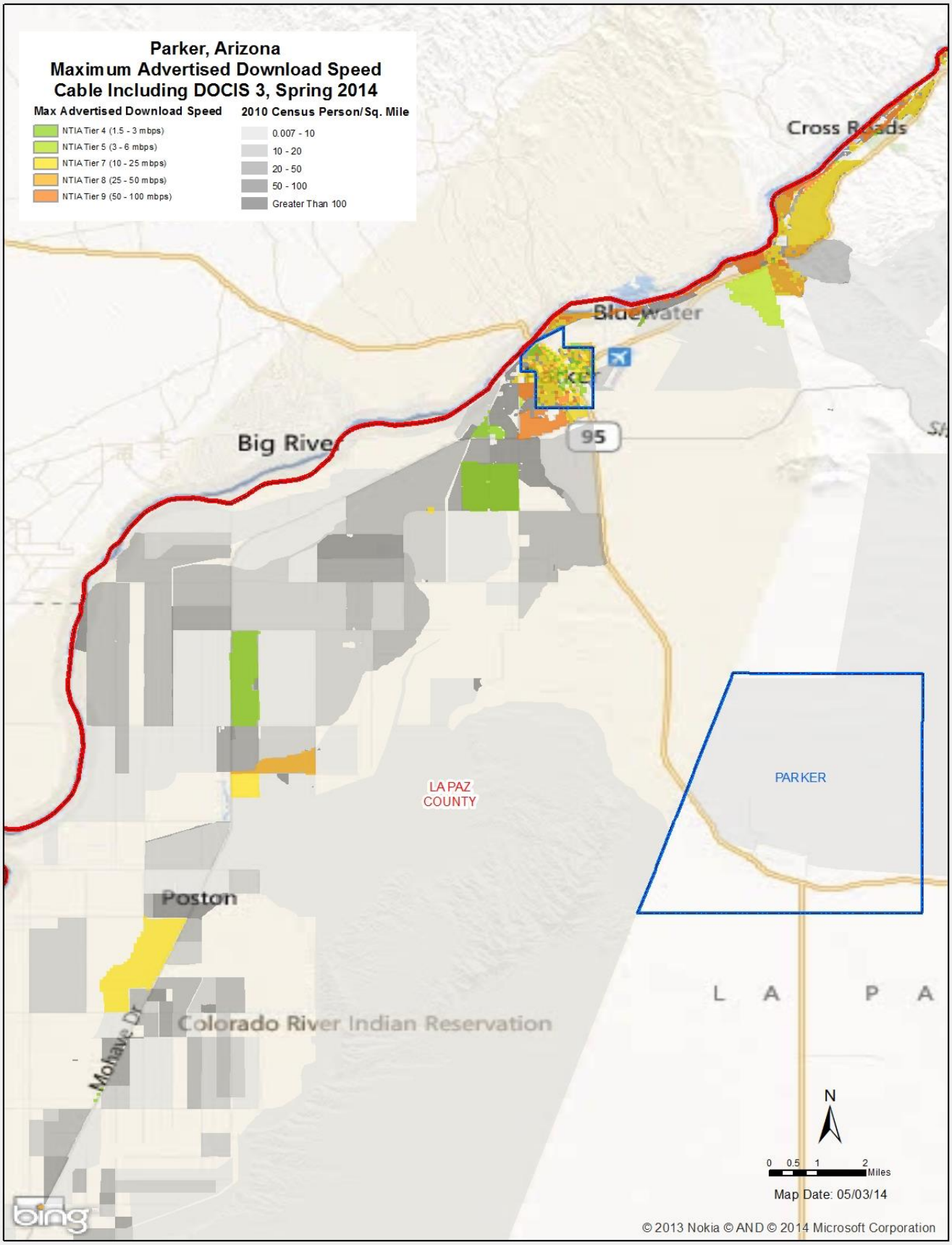

Parker, Arizona
Maximum Advertised Download Speed
DSL, XDSL and Other Copper, Spring 2014
Max Advertised Download Speed
NTIA Tier 3 (768 kbps - 1.5 mbps)
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
Cross Roads
Bluewater
Parker
Big River
95
LA PAZ COUNTY
PARKER
Poston
Colorado River Indian Reservation
Mohave Dr
L A P A
N
0 0.5 1 2 Miles
Map Date: 05/03/14
bing
© 2013 Nokia © AND © 2014 Microsoft Corporation


Parker, Arizona
Maximum Advertised Download Speed
Cable Including DOCIS 3, Spring 2014
Max Advertised Download Speed
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 7 (10 - 25 mbps)
NTIA Tier 8 (25 - 50 mbps)
NTIA Tier 9 (50 - 100 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
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50 - 100
Greater Than 100
Cross Roads
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95
LA PAZ
COUNTY
PARKER
Poston
Colorado River Indian Reservation
Mohave Dr
L A P A
N
0 0.5 1 2
Miles
Map Date: 05/03/14
bing
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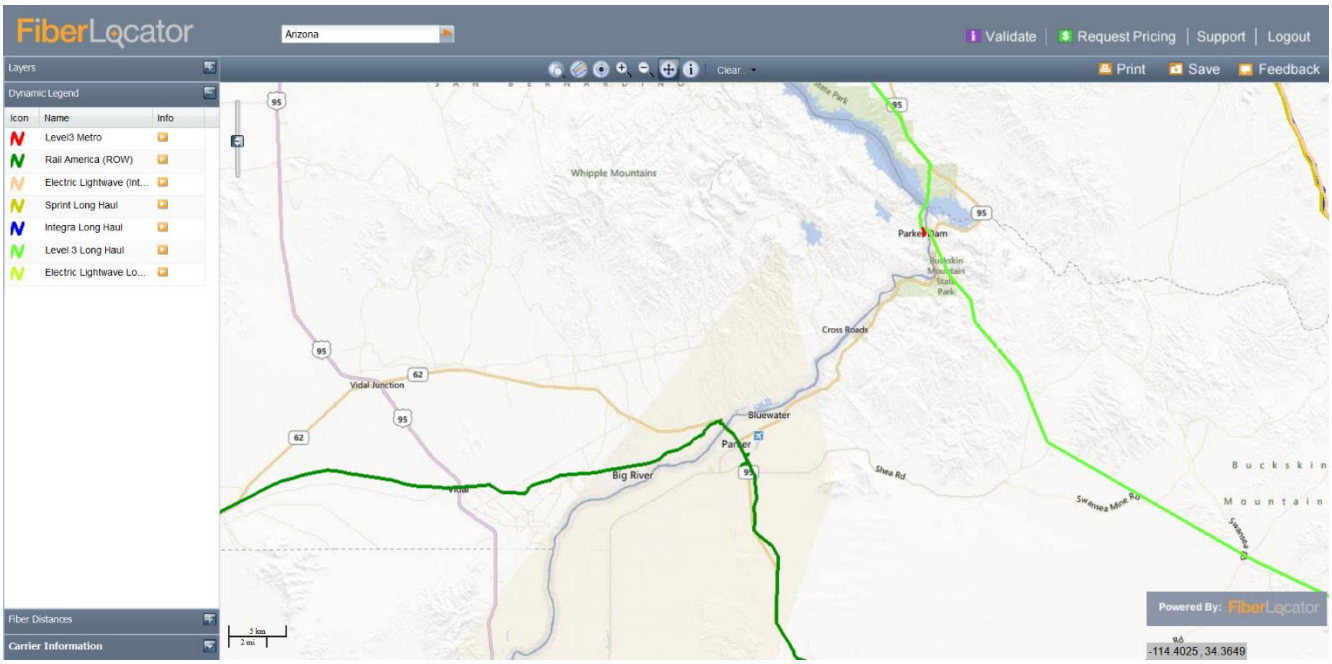
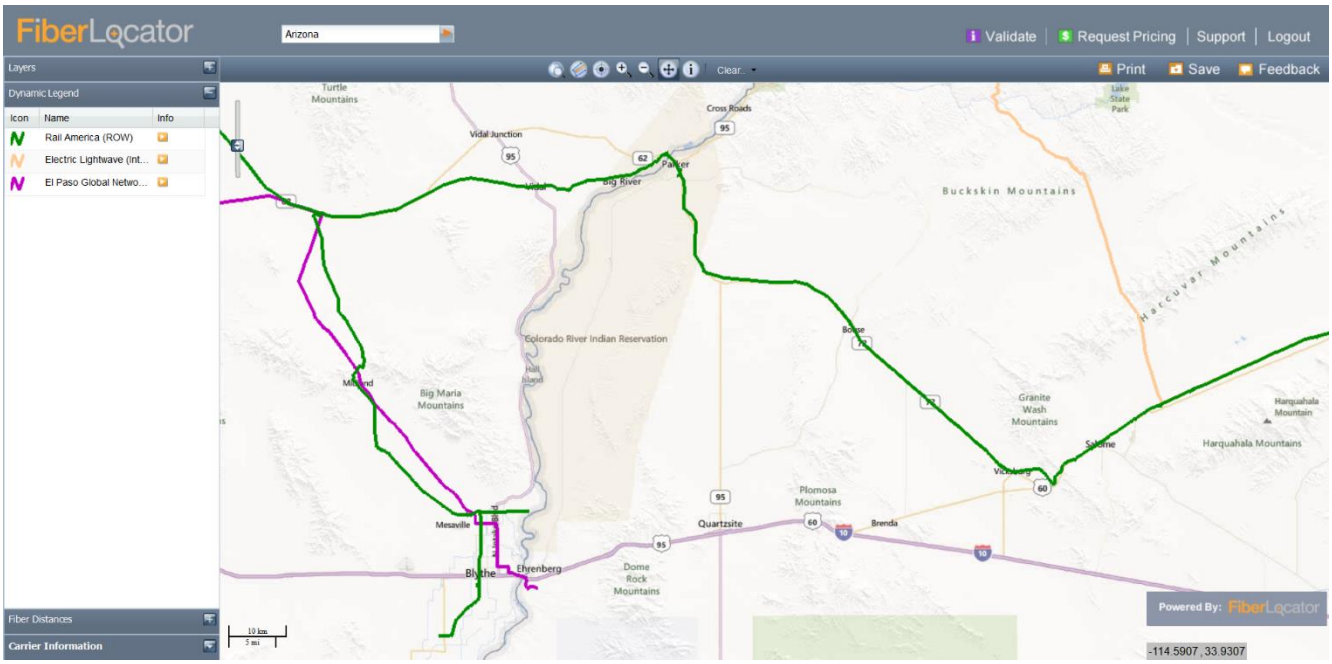
Parker-Quartzsite Area Selective Fiber Maps



Parker Detail Selective Fiber Maps



Source: NEF FiberLocator (http://www.fiberlocator.com/)

La Paz County Broadband Coverage for Spring 2014

	La Paz County		State of Arizona	
All Broadband Tech (Except Satellite)	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	99.99%	99.99%	99.55%	99.56%
≥ 3 Mbps Down	96.23%	95.48%	98.80%	98.59%
≥ 6 Mbps Down	92.38%	87.07%	98.32%	98.19%
≥ 10 Mbps Down	92.32%	86.92%	97.70%	97.41%
DSL, xDSL & Other Copper Tech	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	31.28%	39.73%	93.65%	93.33%
≥ 3 Mbps Down	26.63%	34.33%	89.03%	88.29%
≥ 6 Mbps Down	20.07%	23.53%	82.36%	81.09%
≥ 10 Mbps Down	19.20%	22.59%	73.90%	72.46%
Cable Modem Technologies	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	29.06%	28.23%	89.25%	88.66%
≥ 3 Mbps Down	25.38%	26.32%	89.03%	88.41%
≥ 6 Mbps Down	23.69%	25.38%	88.95%	88.34%
≥ 10 Mbps Down	23.69%	25.38%	88.95%	88.34%
Fixed Wireless Technologies	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	0.05%	0.14%	94.68%	94.39%
≥ 3 Mbps Down	0.00%	0.00%	62.00%	62.87%
≥ 6 Mbps Down	0.00%	0.00%	53.70%	54.57%
≥ 10 Mbps Down	0.00%	0.00%	5.85%	5.85%
Mobile Wireless Technologies	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	99.99%	99.99%	98.87%	99.01%
≥ 3 Mbps Down	94.69%	92.40%	97.46%	97.26%
≥ 6 Mbps Down	85.76%	73.57%	97.13%	96.79%
≥ 10 Mbps Down	85.70%	73.43%	97.13%	96.79%
	Population Count	**Household Count**	**Population Count**	**Household Count**
County Totals (2010 Census)	20,489	16,049	**6,392,017**	**2,844,526**

Notes: Data presented in table above is as collected by the State of Arizona for the NTIA and FCC broadband maps and submitted in Spring 2014 for Broadband Provider (BP) coverage declared as of 12/31/13. Population across Census Blocks and in proximity to Road Segments are based on calculations utilizing U.S. Census 2010 data.

La Paz County Broadband Providers (13)

Broadband Provider	Service Type	Advertised Download Speed	Advertised Upload Speed	Download Speed Tier	Upload Speed Tier
AT&T Mobility	Mobile Wireless	1.5 - 3 Mbps	768 Kbps - 1.5 Mbps	4	3
		3 - 6 Mbps	3 - 6 Mbps	5	5
CommSpeed	Fixed Wireless	768 Kbps - 1.5 Mbps	768 Kbps - 1.5 Mbps	3	3
Frontier Citizens Utilities Rural	DSL (Asymmetric)	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
		10 - 25 Mbps	1.5 - 3 Mbps	7	4
		25 - 50 Mbps	3 - 6 Mbps	8	5
Frontier Southwest	DSL (Asymmetric)	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
		10 - 25 Mbps	1.5 - 3 Mbps	7	4
		25 - 50 Mbps	3 - 6 Mbps	8	5
HNS (Hughes, Echostar)	Satellite	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
NPG Cable (Suddenlink)	Cable	3 - 6 Mbps	200 - 768 Kbps	5	2
		10 - 25 Mbps	1.5 - 3 Mbps	7	4
		25 - 50 Mbps	1.5 - 3 Mbps	8	4
		50 - 100 Mbps	3 - 6 Mbps	9	5
Skycasters (VSAT Systems)	Satellite	6 - 10 Mbps	1.5 - 3 Mbps	6	4
Sprint Communications	Mobile Wireless	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
StarBand Communications	Satellite	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
T-Mobile	Mobile Wireless	1.5 - 3 Mbps	200 - 768 Kbps	4	2
Table Top Telephone	DSL (Asymmetric)	10 - 25 Mbps	768 Kbps - 1.5 Mbps	7	3
TDS Telecom	DSL (Asymmetric)	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
		1.5 - 3 Mbps	200 - 768 Kbps	4	2
		3 - 6 Mbps	200 - 768 Kbps	5	2
		6 - 10 Mbps	200 - 768 Kbps	6	2
		10 - 25 Mbps	768 Kbps - 1.5 Mbps	7	3
		25 - 50 Mbps	1.5 - 3 Mbps	8	4
Time Warner Cable	Cable	10 - 25 Mbps	1.5 - 3 Mbps	7	4
Verizon Communications	Mobile Wireless	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
		10 - 25 Mbps	3 - 6 Mbps	7	5
ViaSat	Satellite	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3

WACOG Broadband BCA Round 2

Kingman Airport Industrial Park & I-40 Focus Area (Region 4)

Kingman Airport Industrial Park & I-40 Industrial Corridor in Mohave County are important logistic centers and transportation routes along the Canamex Corridor, reflecting potential broadband needs and opportunities for today's environment and relative to the pending major I-11 highway infrastructure investments.

- There is generally good DSL and Cable Modem broadband coverage and delivery speeds in the Kingman area. Community and stakeholders may still need to demonstrate aggregate demand and future growth to existing broadband providers seeking further investment over time.
- Kingman Airport & Industrial Park is served by several providers and reasonably high capacity broadband is readily obtainable by building owners and tenants.
- The Arizona and Nevada Departments of Transportation are working on the I-11 Corridor Study for a possible high priority interstate link between Phoenix and Las Vegas. Such major new road construction along a primary transportation corridor offers a unique opportunity for significant fiber and vertical asset infrastructure. ADOT should be encouraged to plan for broadband partnering and industry brought to the table for information and project development as the I-11 moves to implementation.
- CenturyLink and Suddenlink (formerly NPG) are making strategic investments in incremental fiber and service offerings. TDS Telecom is expanding DSL service availability in the area under FCC CAF Round 2 funding.
- GovNet will bring alternative high level services to a fair number of institutions in the education, healthcare, and government arenas as its deployment matures. However this remains an intermediate step due to limited carrying capacities.

The Mohave region's Distribution, Logistics and Transportation Industry Cluster is currently in a strategic position for growth as Pacific ports and other west coast inland ports continue to reach capacity and the planned I-11 highway becomes a critical passageway of the CANAMEX Corridor. Mohave County's vast desert areas offer some of the highest solar and wind power potential in the nation.

Kingman Airport & Industrial Park (http://www.kingmanairportauthority.com/) is approximately 4,000 acres in size and located five miles north of Interstate 40, along U.S. Highway 66, and adjacent to the main line of the Burlington Northern and Santa Fe Rail Road and rail switching operations. It serves as home to more than 70 businesses, employing over 2,100 people with easy access Los Angeles, Las Vegas and Phoenix. Discussions with senior staff indicate that reasonably high capacity broadband is readily obtainable by building owners and tenants, though costs for service remain a concern. Frontier has a point of presence near the industrial park entrance and good availability throughout, complemented by some competitive coverage from Suddenlink and Wecom.

The Arizona and Nevada Departments of Transportation are working together on the two-year Interstate 11 (I-11) and Intermountain West Corridor Study. Congress recognized the importance of the portion of the Corridor between Phoenix and Las Vegas and designated it as future I-11 in the recent transportation authorization bill, Moving Ahead for Progress in the 21st Century Act (MAP-21). The study includes detailed corridor planning of a possible high priority interstate link between Phoenix and Las Vegas, and high-level visioning for potentially

extending the corridor north to Canada and south to Mexico. Some sections of this corridor will be constructed or enhanced in coming years, while the majority of the corridor remains in the long range planning phase. High quality transportation corridors play a key role in stimulating economic activity throughout North America especially in proximity to international trade flows. The I-11 corridor has the potential to attract similar trade and economic activity to Arizona and Nevada.

Such major new road construction along a primary transportation corridor offers a unique opportunity for significant fiber and vertical asset infrastructure. ADOT, in conjunction with investing broadband providers, should plan to deploy conduit along state highways and rural frontage roads. The fiber and vertical assets can then be leased to providers at cost to facilitate availability of fiber Internet middle-mile capacity to support providers' investments in more and faster services for rural Arizona.

Trenching and installation of conduits is very low cost when a road bed is under construction or repair and is supported by the Arizona Digital Highways Law SB1402. Though there is no funding in the Digital Highways Law itself, State-wide eRate facilitation could provide funding from gain sharing along with possible shared funding with Public Safety Broadband (FirstNet). One or more providers will certainly be interested in access to ready conduit and hopefully invest according. Additionally, leased conduit can be recycled to pay for additional capacity under a sustainable business model.

Primary Focus Area Contacts:

Bennett Bratley, Acting Director & Economic Development Specialist
Mohave County Economic Development Department (EDD - http://www.mohavedevelopment.org/)
Phone: 928-757-0960, bennett.bratley@mohavecounty.us

Alan Pruitt, Economic Development Director
Western Arizona Economic Development District (WAEDD - http://www.waedd.org/)
Phone: (928) 328-1524, alan.pruitt@gmail.com

Craig Raborn, Transportation Planner
Western Arizona Council of Governments (WACOG - http://www.wacog.com/) (http://www.wacog.com/transportation_services.html)
Phone: 928-377-1070, craigr@wacog.com

Ted McKever, Chief Information Officer (CIO), Information Technology
Mohave Community College (MCC - http://www.mohave.edu/) (Still in role?)
Phone: 928-692-3076 x1276, Main: 928-758-3926, Mobile: 928-853-5682, tmckever@mohave.edu & mckever5682@msn.com

Nathan McDaniel, Director
Information Technology Department, Mohave County (http://www.mohavecounty.us/ContentPage.aspx?id=121)
Phone: 928-753-0717, nathan.mcdaniel@mohavecounty.us

Bob Riley, Director of Economic Development
Kingman Airport Authority, Inc. (http://www.kingmanairportauthority.com/)
Phone: 928-757-2134, kaaecondev@citlink.net
Also: Dave French, Executive Director, kaadave@frontier.com

Secondary Focus Area Contacts:

Michael D. File, Mohave County School Superintendent

Mohave County School Superintendent
(http://www.mohavecounty.us/ContentPage.aspx?id=130)
Mohave County Educational Service Center (MCESC - http://www.mcss.k12.az.us/)
Main: 928-753-0747, Mobile: 928-753-0747, mfile@mcss.k12.az.us

Tom Sheahan, Mohave County Sheriff

Mohave County Sheriff's Office (http://www.mohavecounty.us/ContentPage.aspx?id=131)
Main: 928-753-0753, TF: 800-522-4312, mcso@mohavecounty.us

I-11 & Intermountain West Corridor Contacts:

I-11 & Intermountain West Corridor Study - http://i11study.com/wp/

Project Documents - http://i11study.com/wp/?page_id=237

Meetings - http://i11study.com/wp/?page_id=235

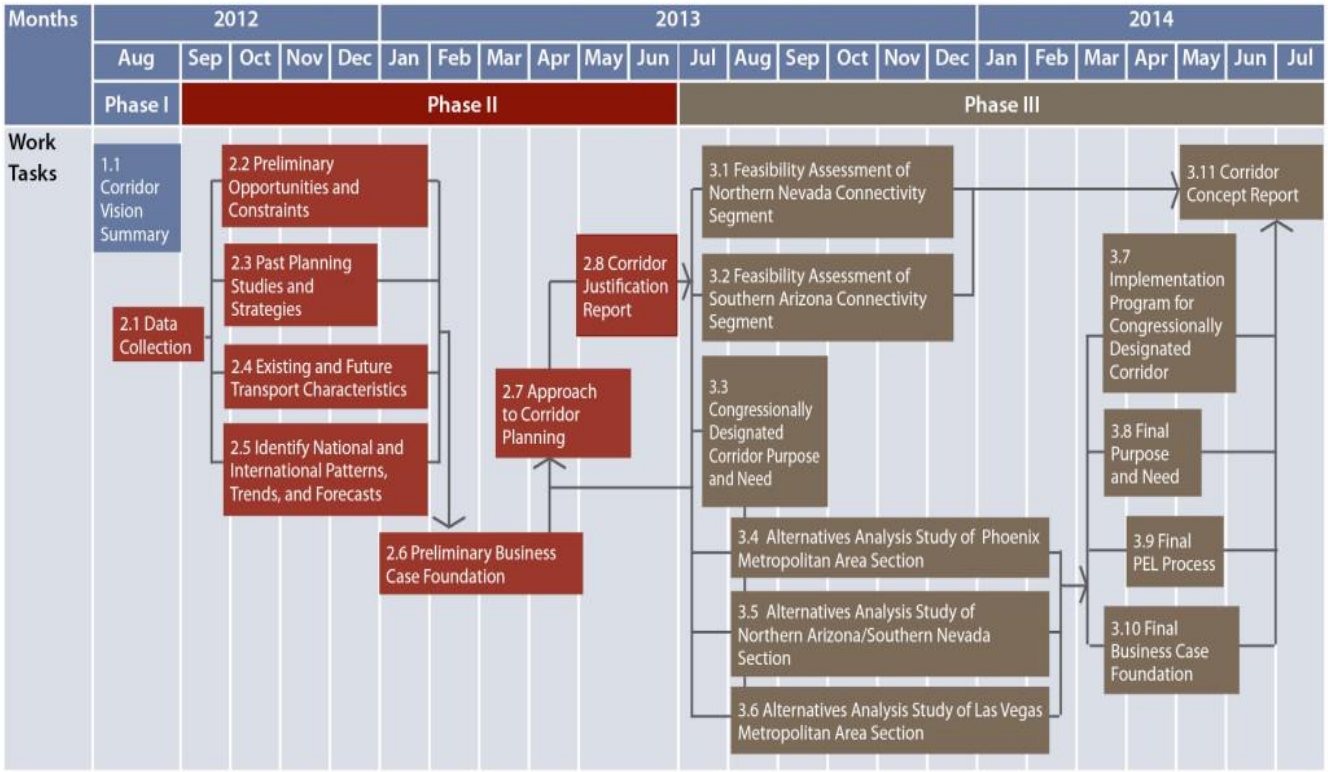
Links - http://i11study.com/wp/?page_id=91

I-11 & Intermountain West Corridor Project Contacts:

Sondra Rosenberg, PTP, NDOT, Phone: 775-888-7241, srosenberg@dot.state.nv.us

Michael Kies, PE, ADOT, Phone: 602-712-8140, mkies@azdot.gov

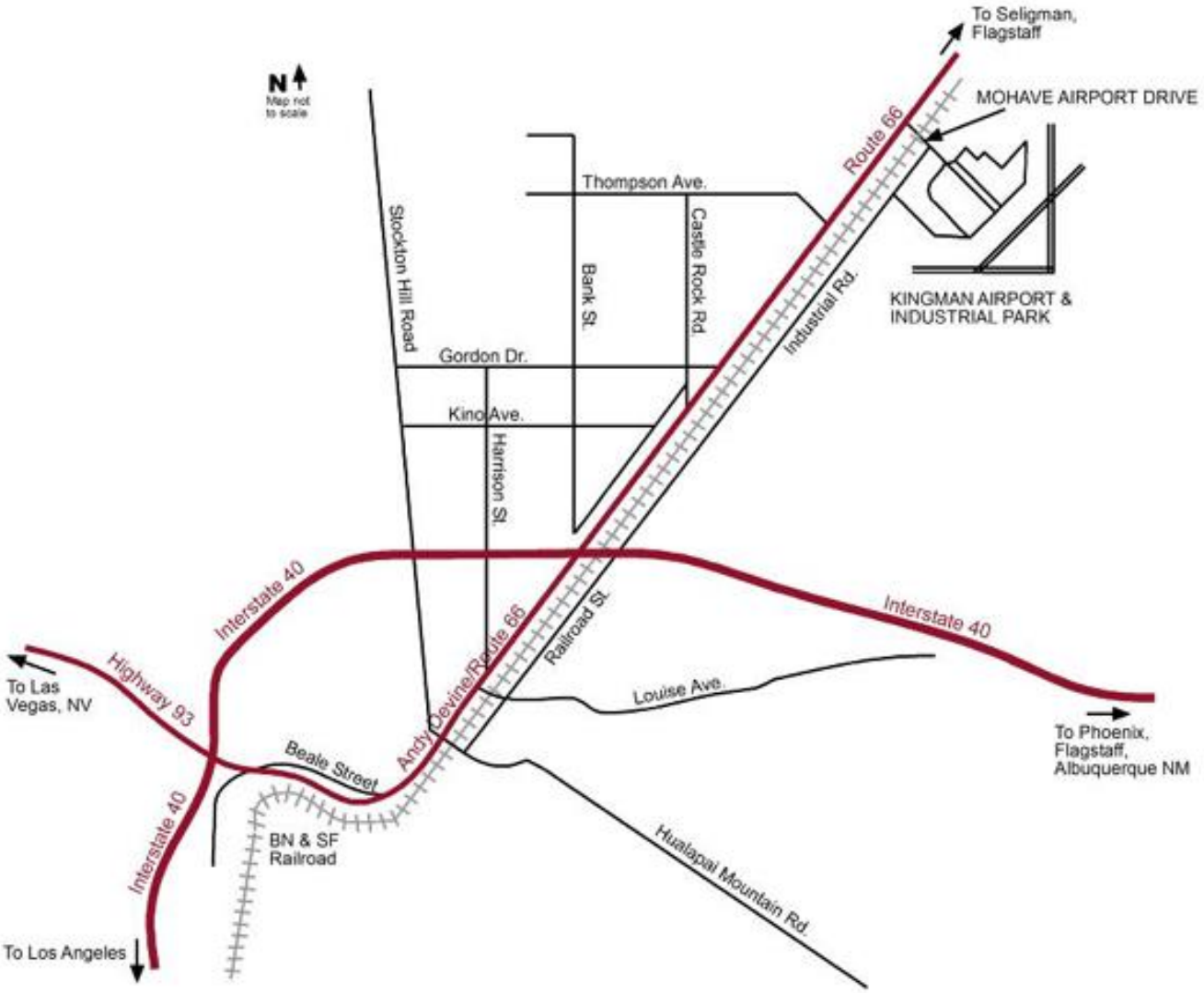
Audra Koester Thomas, I-11 Corridor Team Member, Phone: 480-816-1811, audra@psaplanning.com



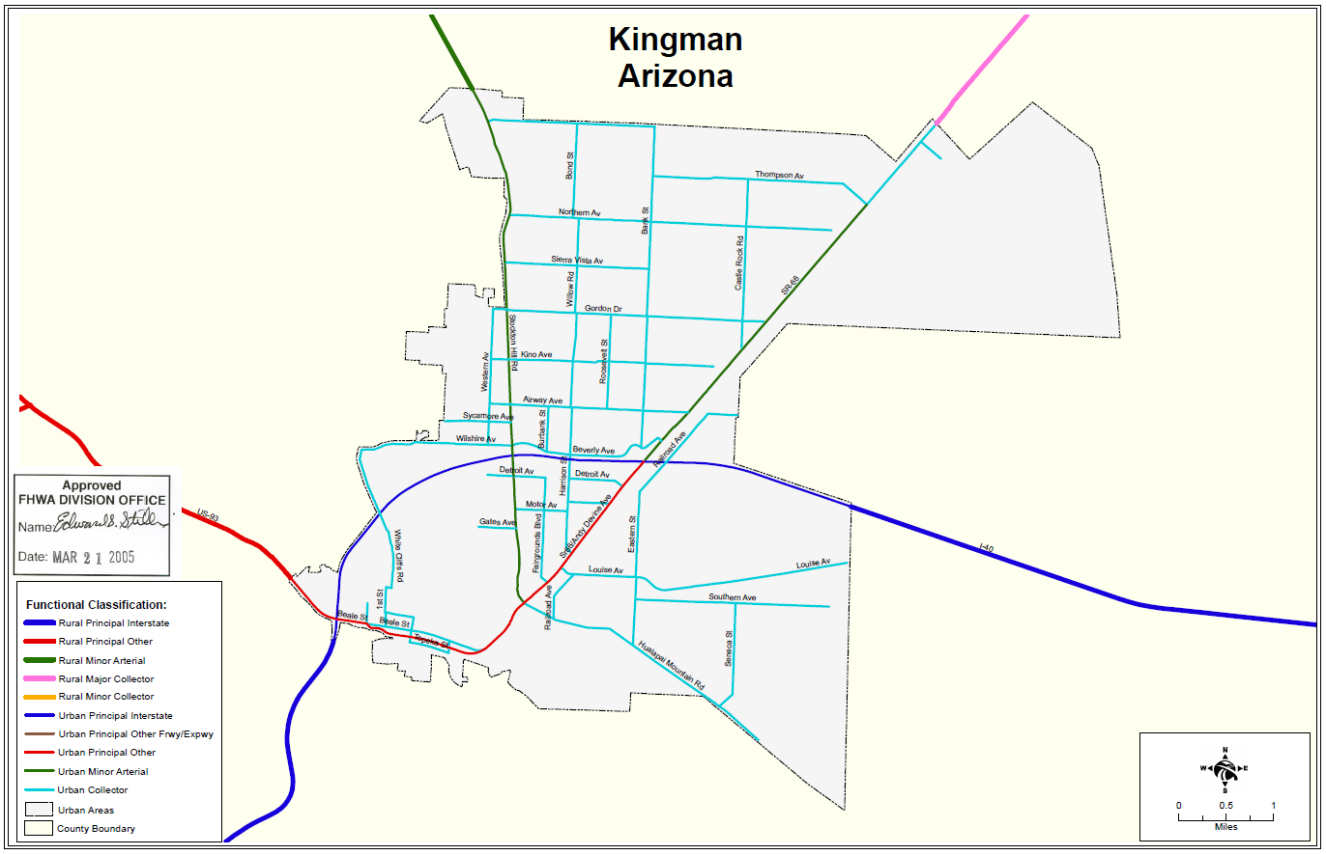
Additional City of Kingman & Mohave County Information:

- Mohave County - http://www.mohavecounty.us/
- Mohave County Public Works - Engineering - http://www.mohavecounty.us/ContentPage.aspx?id=128&cid=235
- Mohave County Economic Development. - http://www.mohavedevelopment.org/
- City of Kingman - http://www.cityofkingman.gov/
- Kingman Airport & Industrial Park - http://www.kingmanairportauthority.com/
    - Industrial Park - http://www.kingmanairportauthority.com/industrial_park.htm
- Kingman Chamber of Commerce - http://www.kingmanchamber.org/
- Kingman Tourism and Visitors Bureau - http://www.kingmantourism.org/
- Bullhead City Chamber of Commerce - http://www.bullheadchamber.com/
- Lake Havasu Area Chamber of Commerce - http://www.havasuchamber.com/
- Mohave County Wikipedia Entry - http://en.wikipedia.org/wiki/Mohave_County,_Arizona

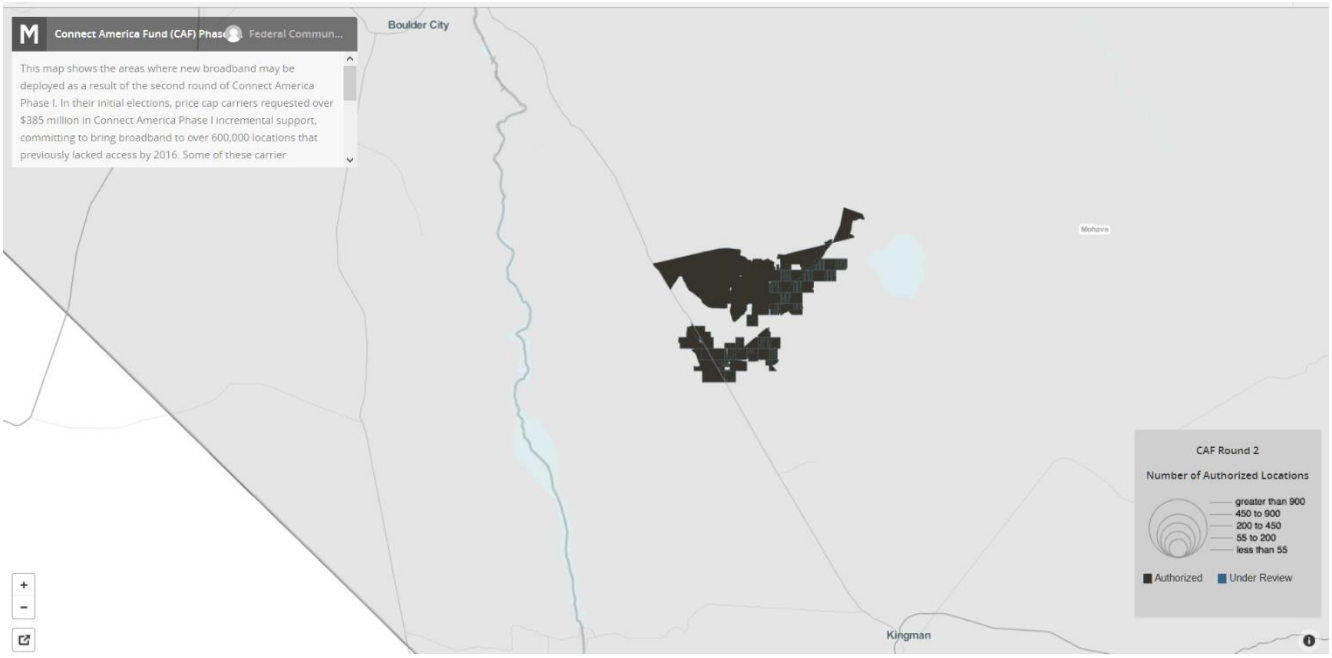
Kingman Area Map



ADOT City of Kingman Map



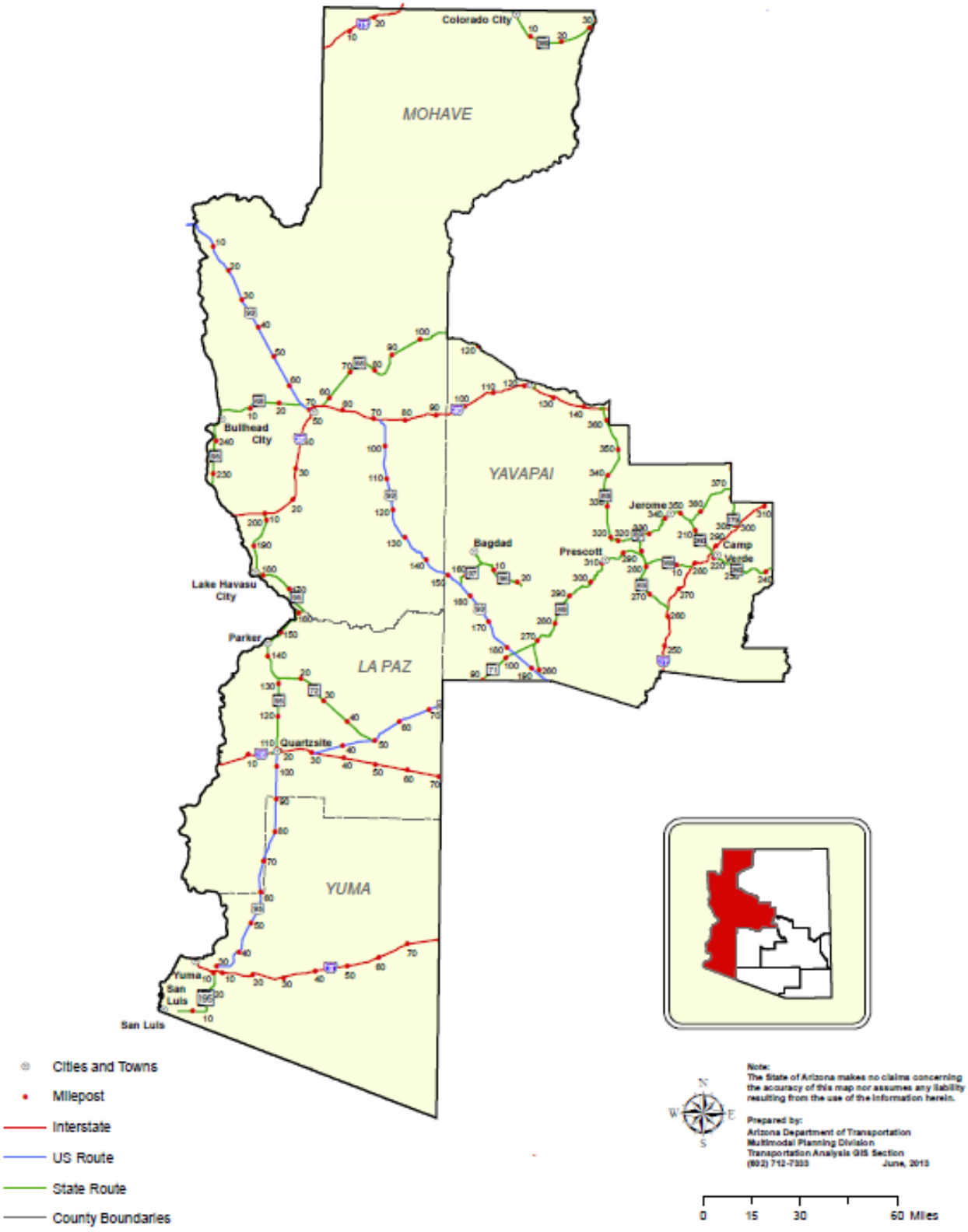
TDS FCC CAF Round 2 in Mohave County



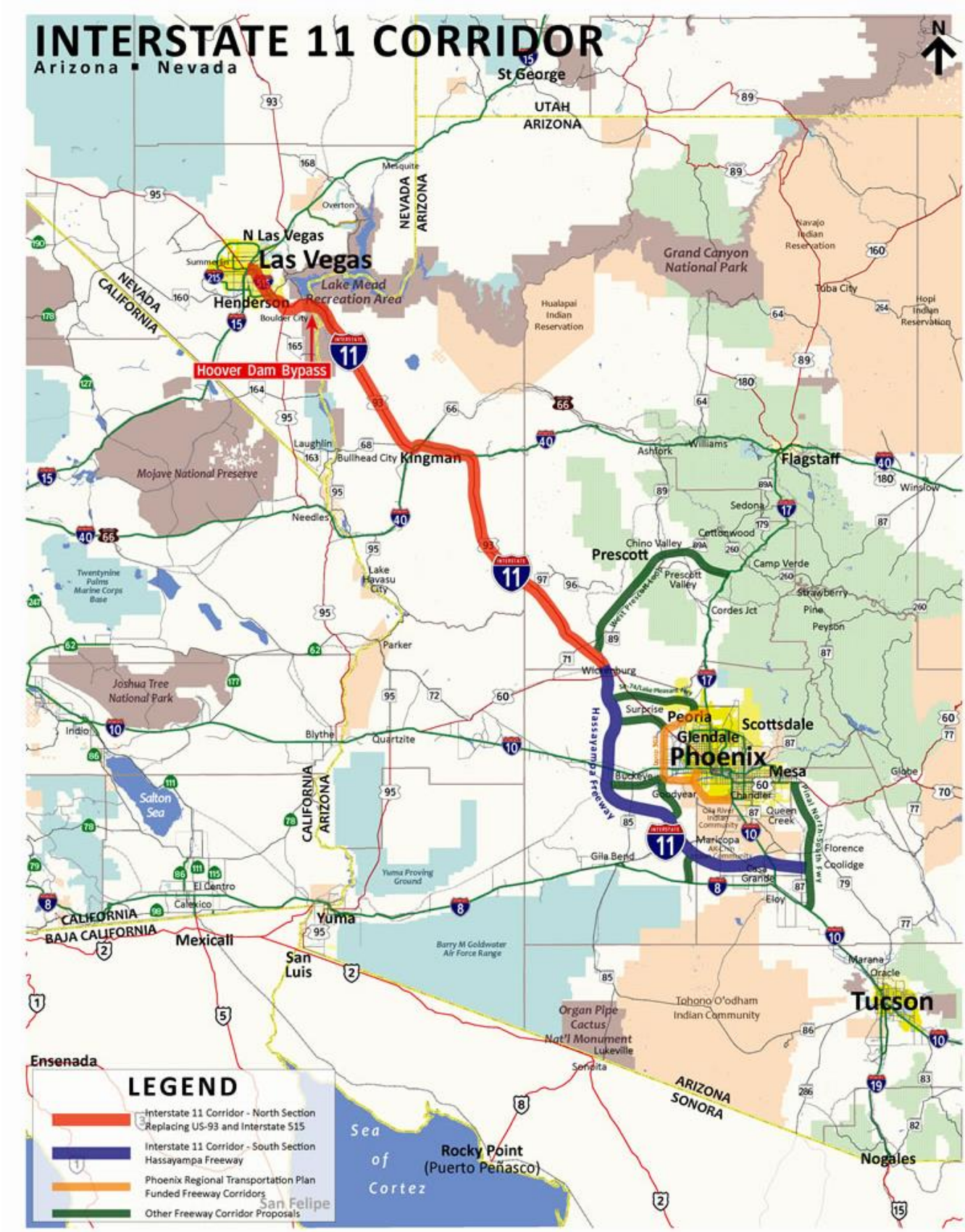
ADOT Transportation District 6 including Kingman

Transportation Board District 6

Milepost System



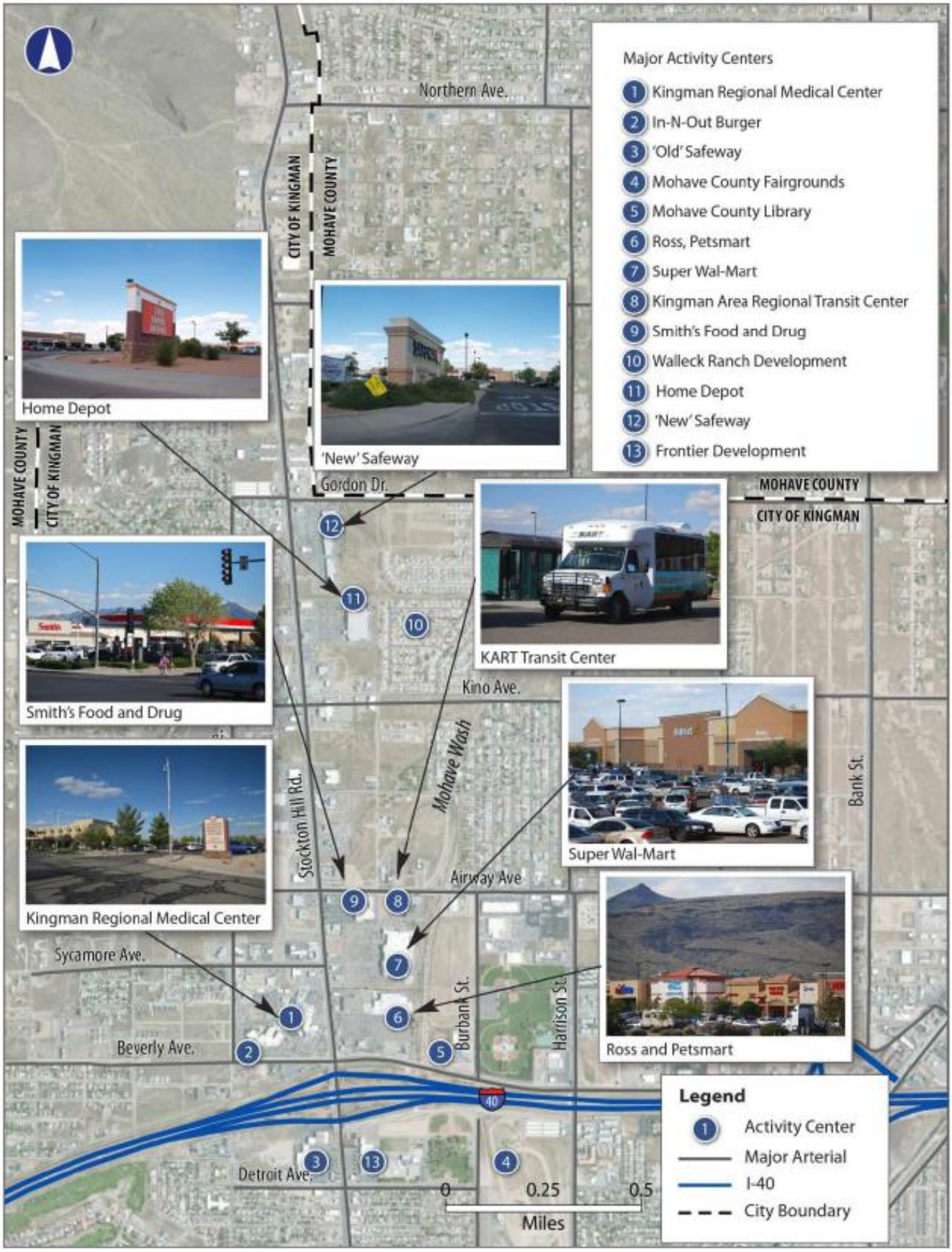
Interstate 11 Corridor Possible Routes



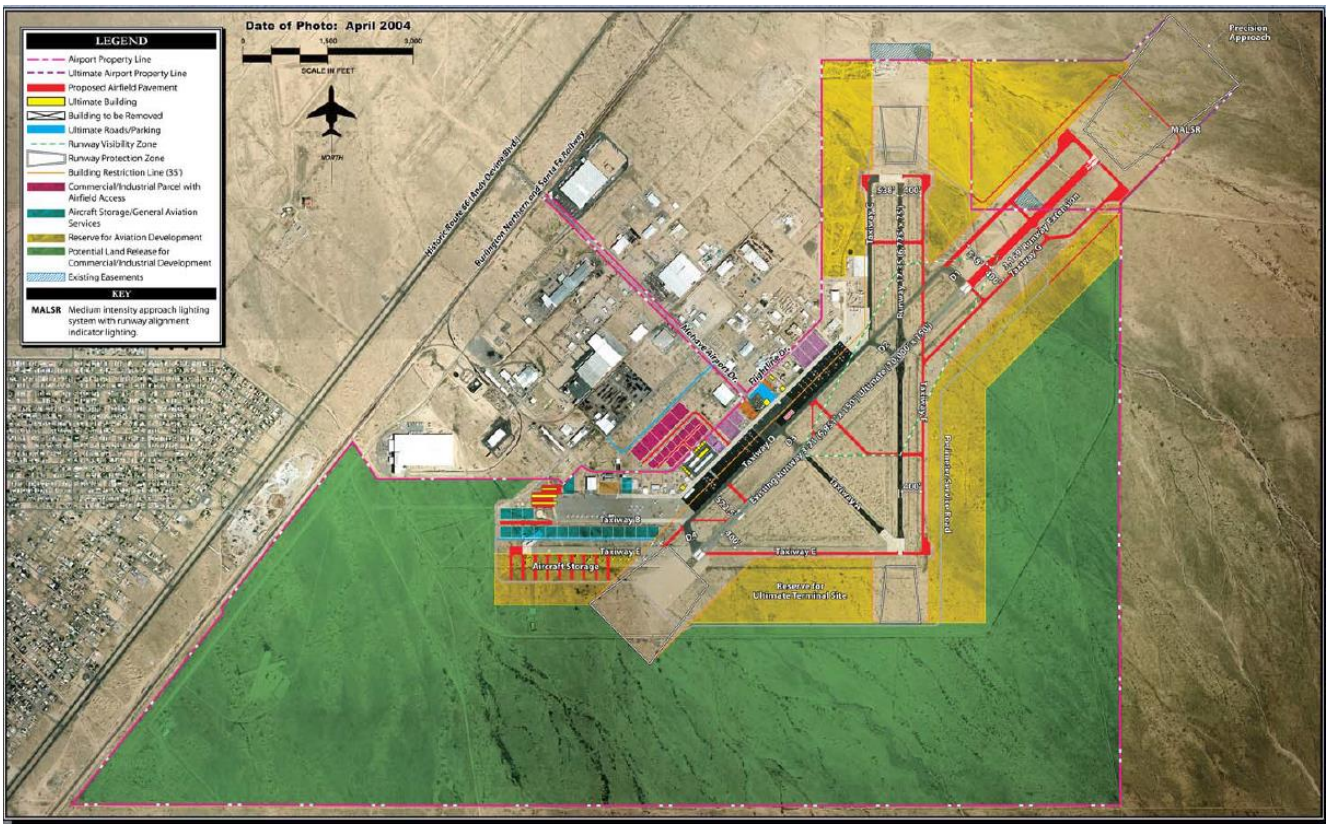
Source: I-11 & Intermountain West Corridor Study (http://i11study.com/

ADOT I-40/US 93 West Kingman Possible Corridor Alternatives

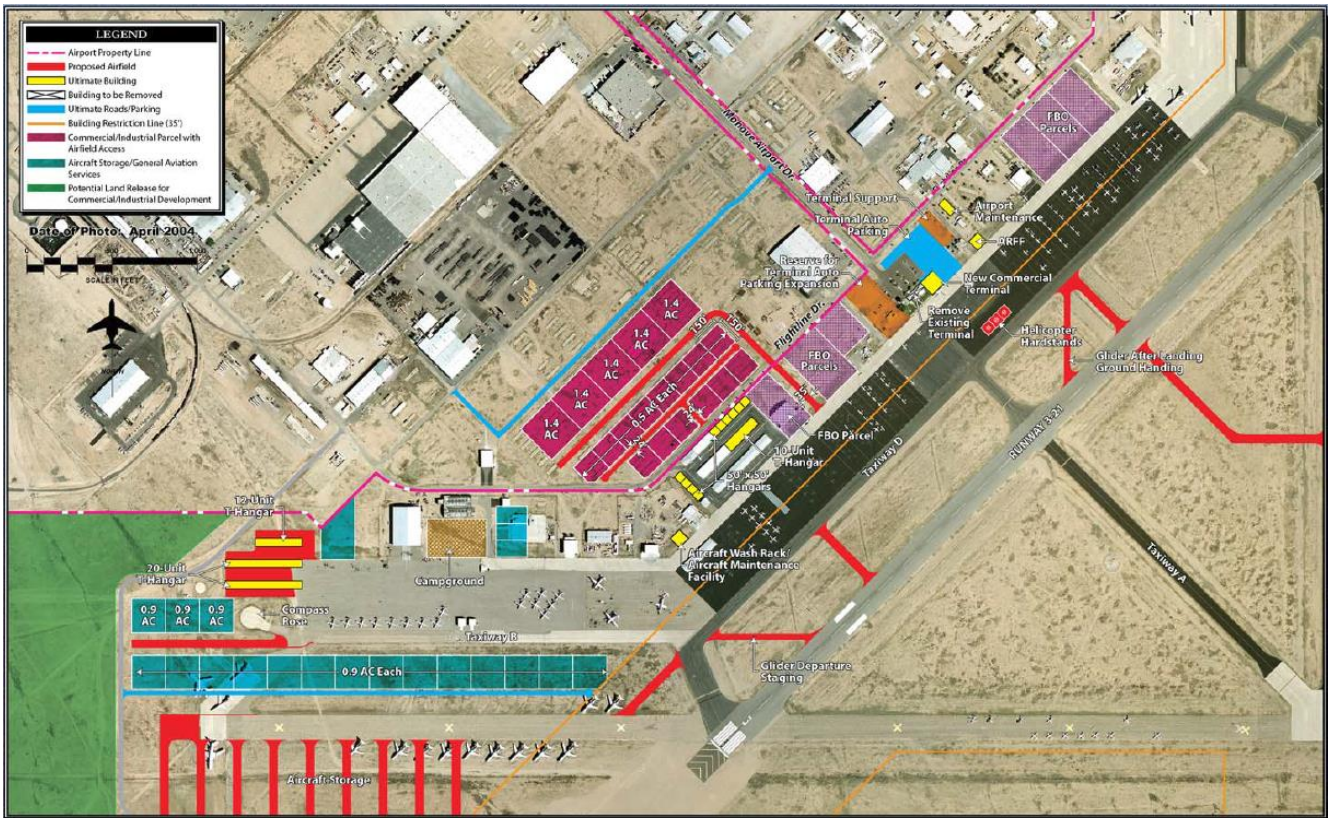
ADOT Stockton Hill Road Corridor Major Activity Centers



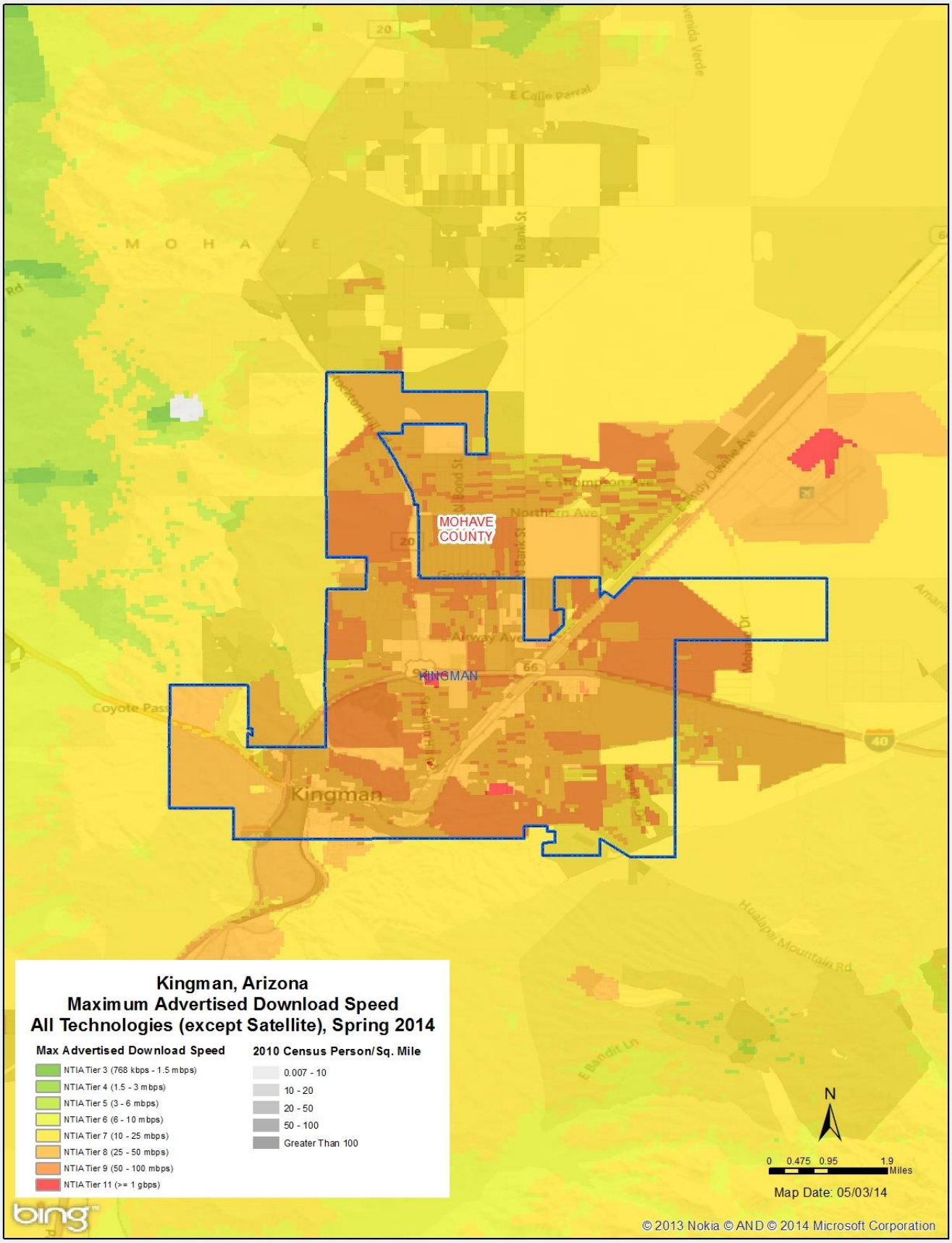
Kingman Airport Recommended Airfield Development Concept



Kingman Airport Recommended Landside Development Concept



Kingman Airport Aerial Photo


Kingman, Arizona
Maximum Advertised Download Speed
All Technologies (except Satellite), Spring 2014
Max Advertised Download Speed
NTIA Tier 3 (768 kbps - 1.5 mbps)
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 6 (6 - 10 mbps)
NTIA Tier 7 (10 - 25 mbps)
NTIA Tier 8 (25 - 50 mbps)
NTIA Tier 9 (50 - 100 mbps)
NTIA Tier 11 (>= 1 gbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
MOHAVE COUNTY
KINGMAN
Kingman
N
0 0.475 0.95 1.9
Miles
Map Date: 05/03/14
bing
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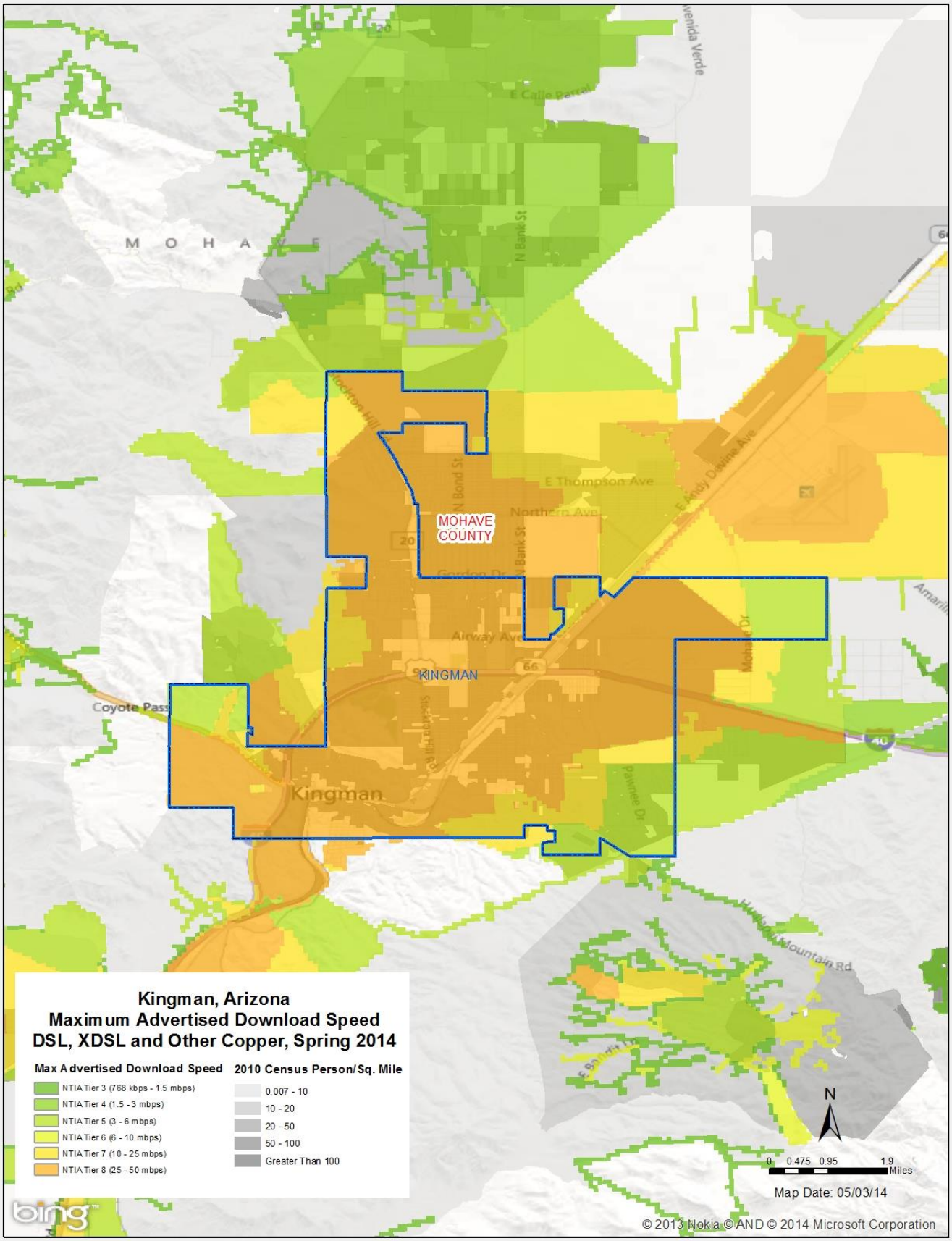
Kingman, Arizona
Maximum Advertised Download Speed
DSL, XDSL and Other Copper, Spring 2014
Max Advertised Download Speed
NTIA Tier 3 (768 kbps - 1.5 mbps)
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 6 (6 - 10 mbps)
NTIA Tier 7 (10 - 25 mbps)
NTIA Tier 8 (25 - 50 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
MOHAVE COUNTY
KINGMAN
Kingman
Coyote Pass
E Thompson Ave
Northern Ave
Airway Ave
N Bond St
N Banks St
Stockton Hill Rd
Pawnee Dr
Hualapai Mountain Rd
E Andy Devine Ave
N
0 0.475 0.95 1.9
Miles
Map Date: 05/03/14
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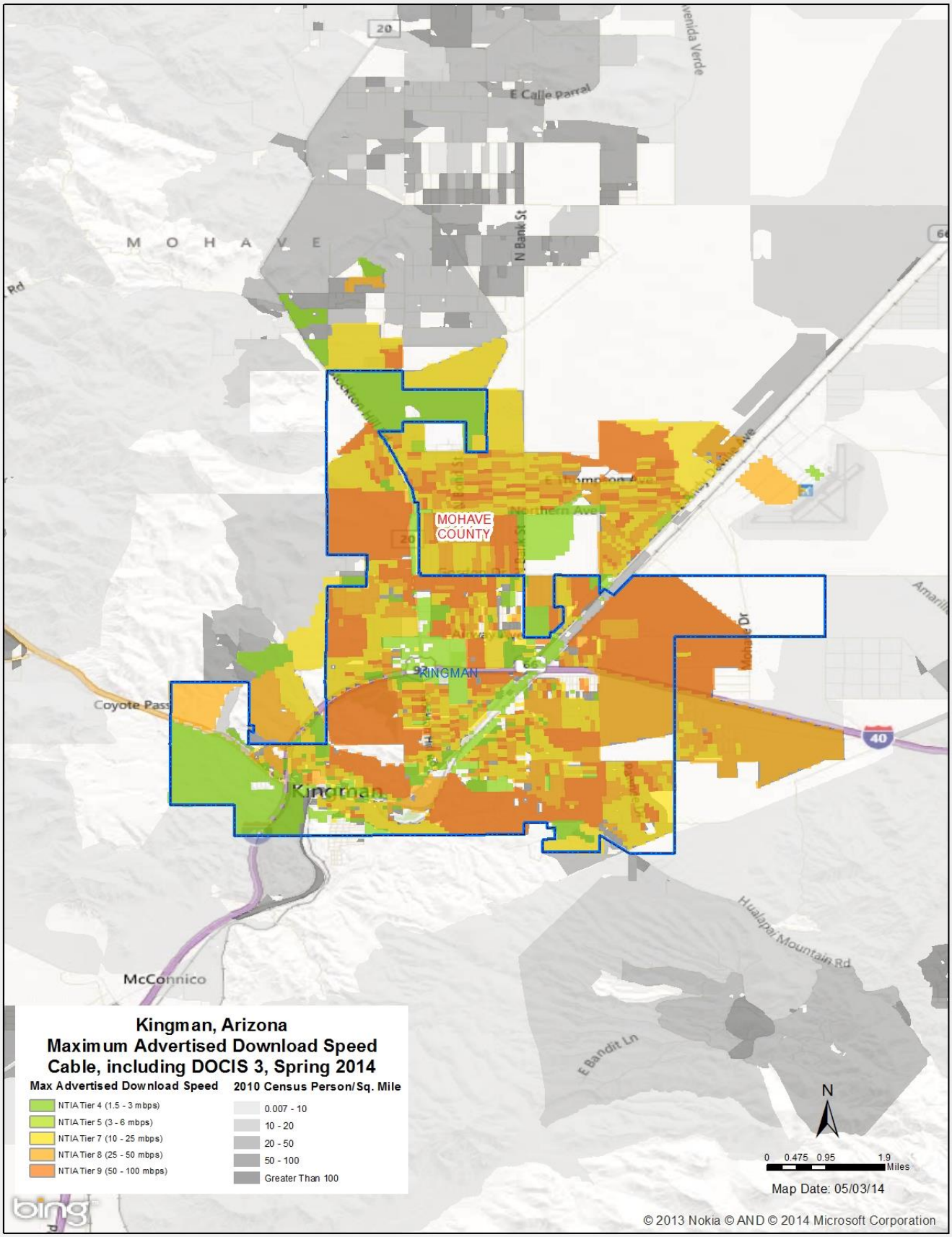
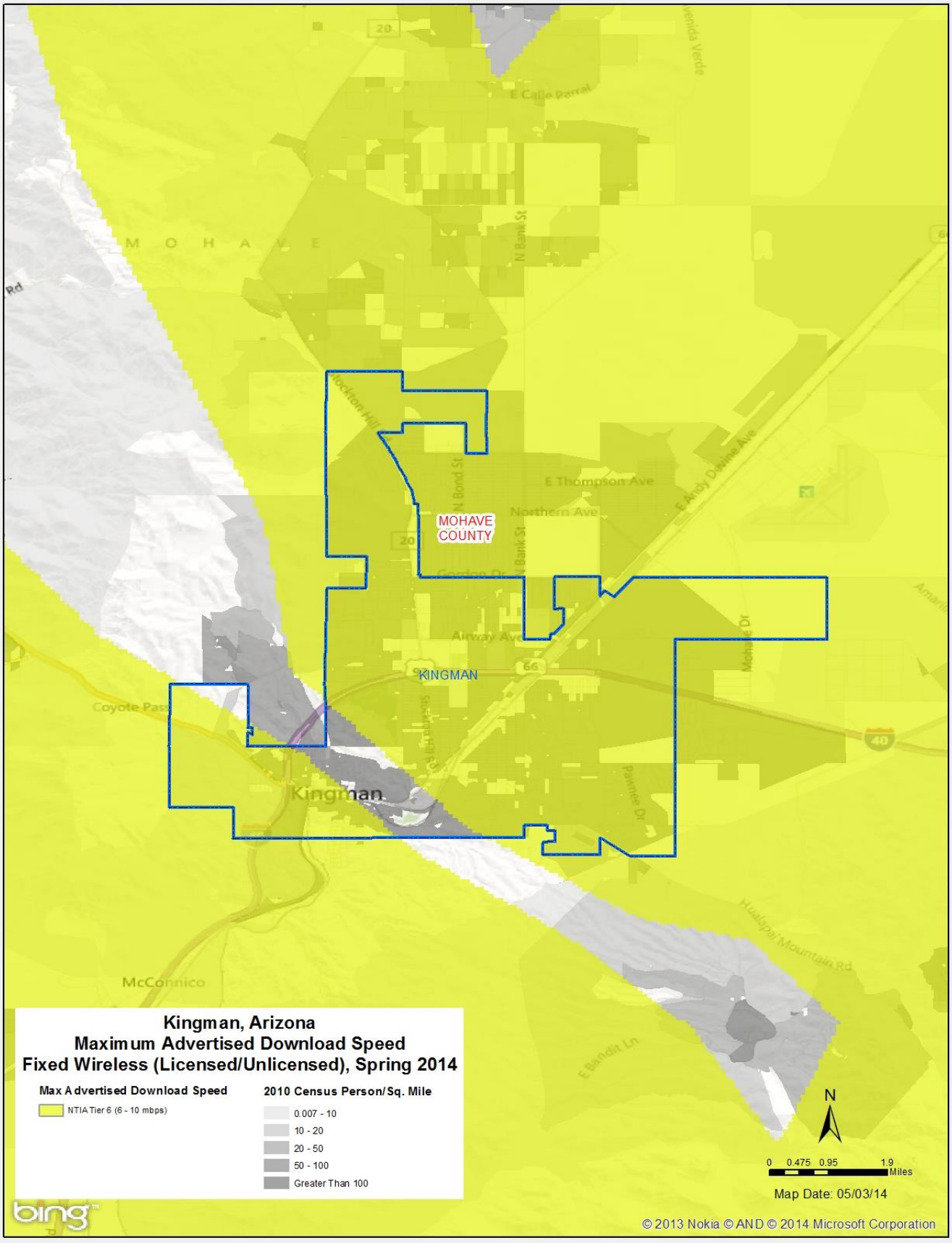

Kingman, Arizona
Maximum Advertised Download Speed
Cable, including DOCIS 3, Spring 2014
Max Advertised Download Speed
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 7 (10 - 25 mbps)
NTIA Tier 8 (25 - 50 mbps)
NTIA Tier 9 (50 - 100 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
MOHAVE COUNTY
KINGMAN
Kingman
McConnico
Coyote Pass
E Calle Parral
N Bank St
Mohave Dr
Hualapai Mountain Rd
E Bandit Ln
N
0 0.475 0.95 1.9
Miles
Map Date: 05/03/14
© 2013 Nokia © AND © 2014 Microsoft Corporation


Kingman, Arizona
Maximum Advertised Download Speed
Fixed Wireless (Licensed/Unlicensed), Spring 2014
Max Advertised Download Speed
NTIA Tier 6 (6 - 10 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
MOHAVE COUNTY
KINGMAN
Kingman
McConnico
N
0 0.475 0.95 1.9
Miles
Map Date: 05/03/14
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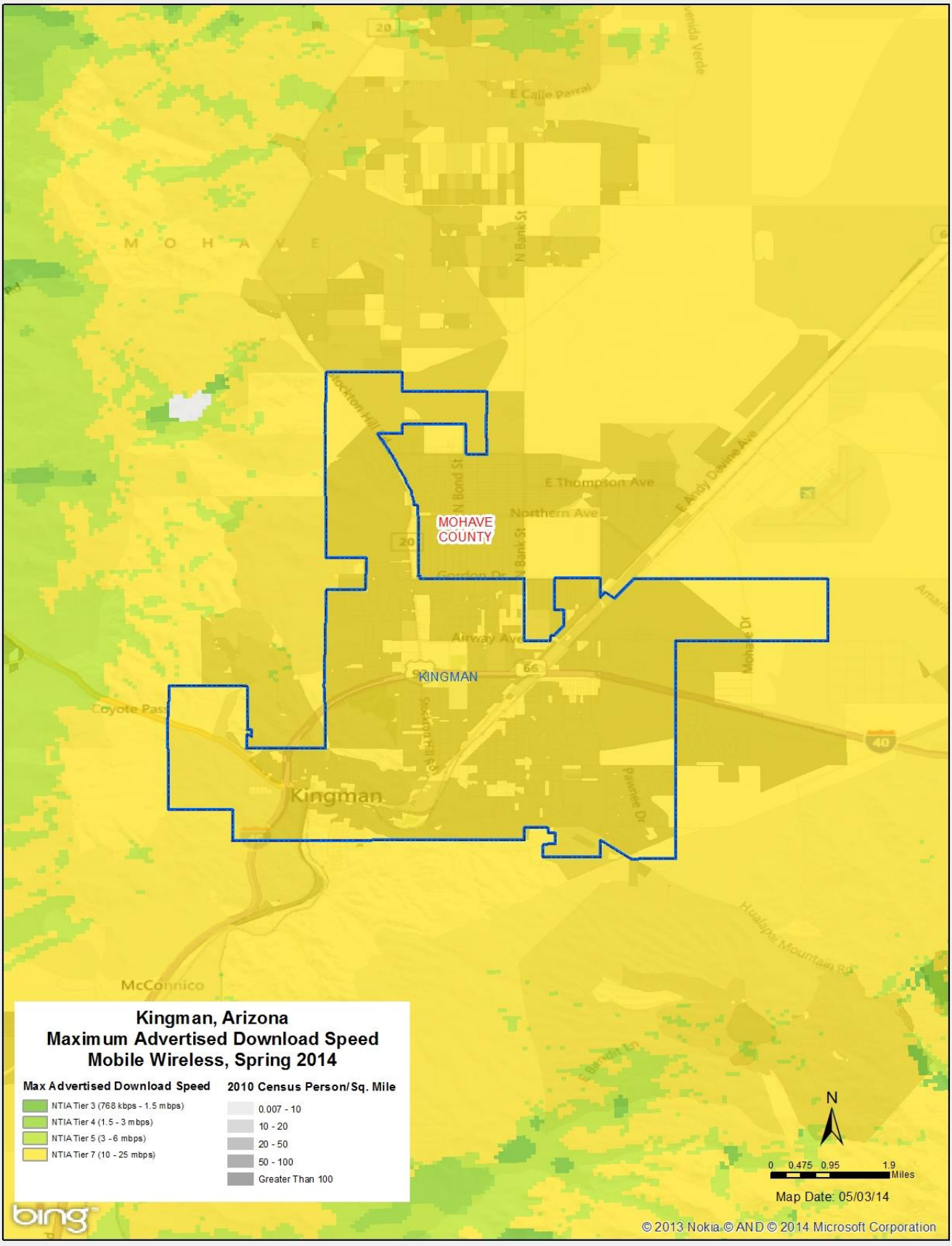
Kingman, Arizona
Maximum Advertised Download Speed
Mobile Wireless, Spring 2014
Max Advertised Download Speed
NTIA Tier 3 (768 kbps - 1.5 mbps)
NTIA Tier 4 (1.5 - 3 mbps)
NTIA Tier 5 (3 - 6 mbps)
NTIA Tier 7 (10 - 25 mbps)
2010 Census Person/Sq. Mile
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
MOHAVE COUNTY
KINGMAN
Kingman
McConnico
Coyote Pass
E Thompson Ave
Northern Ave
Airway Ave
N Bank St
N Bond St
Stockton Hill Rd
Pawnee Dr
Hualapai Mountain Rd
E Andy Devine Ave
N
0 0.475 0.95 1.9
Miles
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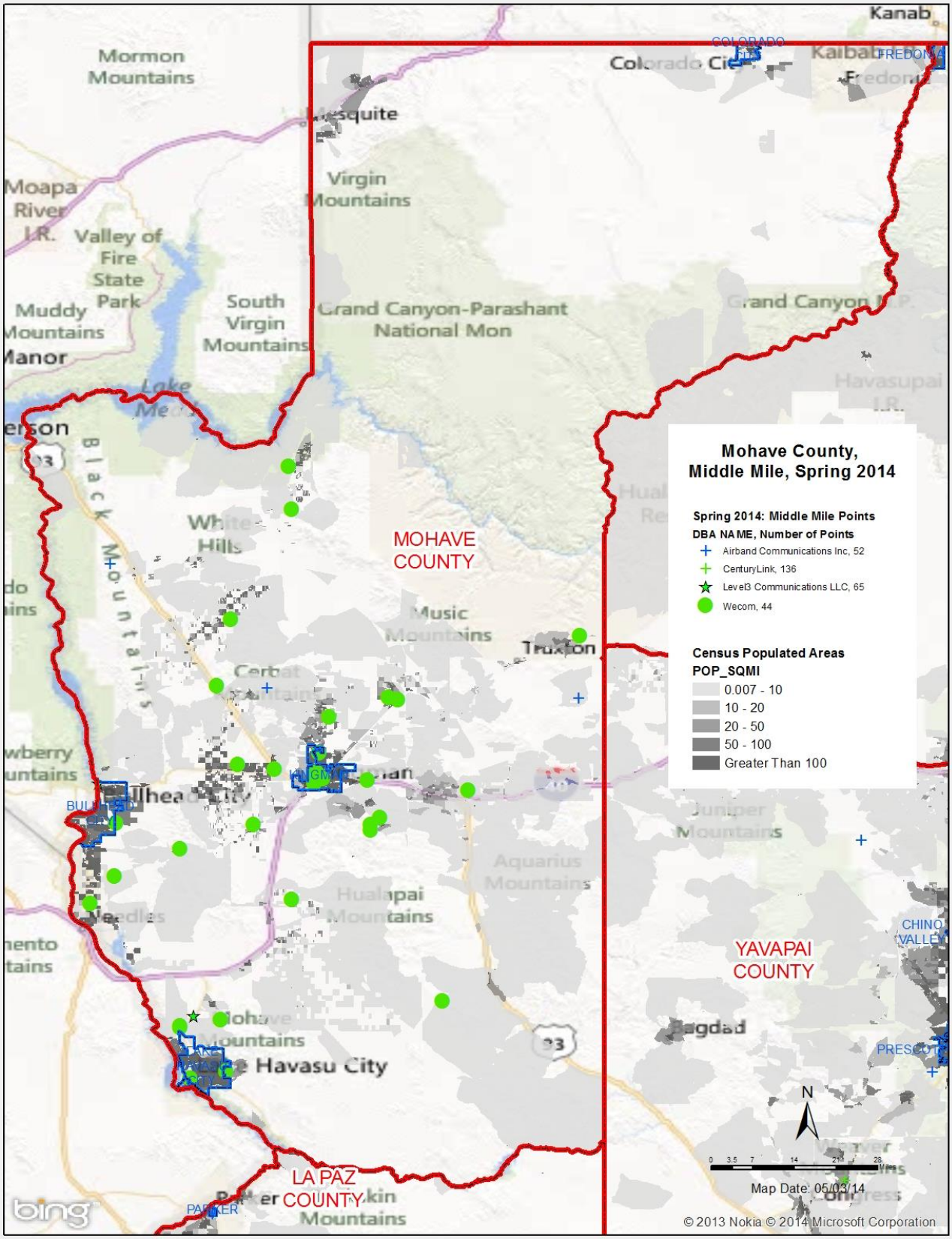
Mohave County,
Middle Mile, Spring 2014
Spring 2014: Middle Mile Points
DBA NAME, Number of Points
Airband Communications Inc, 52
CenturyLink, 136
Level3 Communications LLC, 65
Wecom, 44
Census Populated Areas
POP_SQMI
0.007 - 10
10 - 20
20 - 50
50 - 100
Greater Than 100
MOHAVE COUNTY
YAVAPAI COUNTY
LA PAZ COUNTY
Mormon Mountains
Virgin Mountains
South Virgin Mountains
Grand Canyon-Parashant National Mon
Grand Canyon N.P.
Havasupai I.R.
Moapa River I.R.
Valley of Fire State Park
Muddy Mountains
Black Mountains
White Hills
Music Mountains
Cerbat Mountains
Hualapai Mountains
Aquarius Mountains
Juniper Mountains
Mohave Mountains
Havasu City
Bagdad
Kanab
Kaibab
Fredonia
Colorado City
Mesquite
Truxton
Bullhead City
Needles
Parker
Lake Mead
Lake Havasu City
COLORADO CITY
FREDONIA
BULLHEAD CITY
CHINO VALLEY
PRESCOTT
PARKER
N
Map Date: 05/03/14
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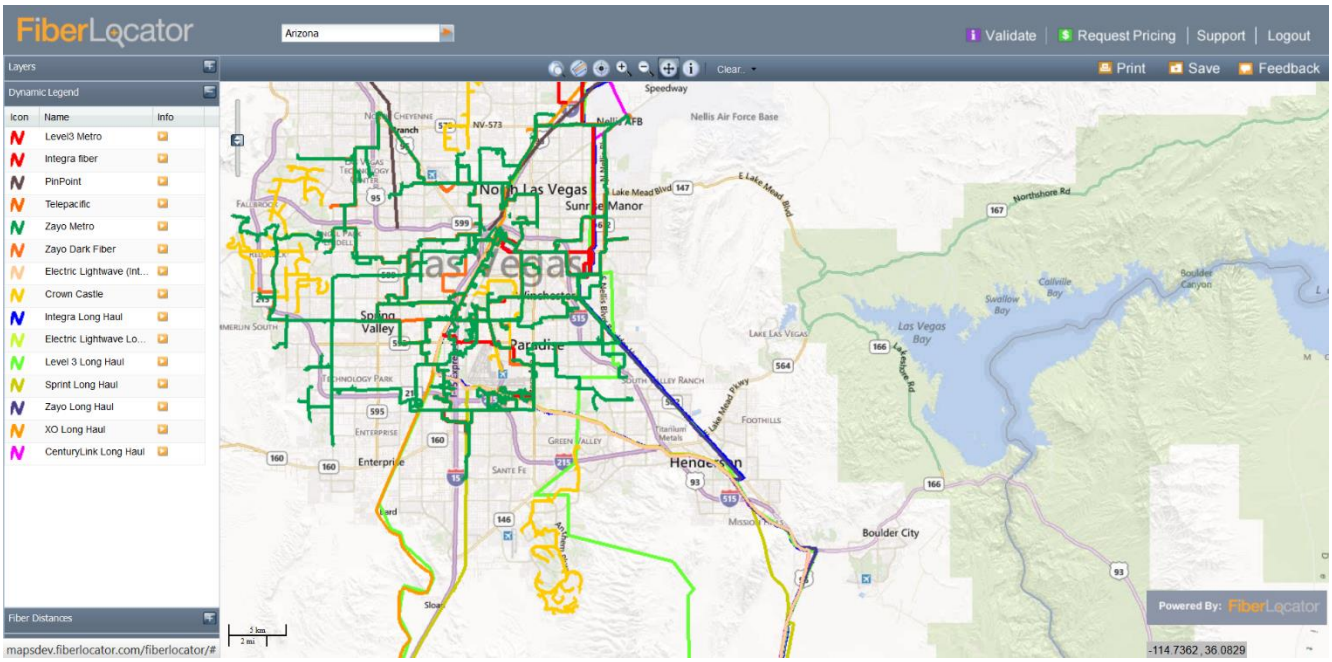
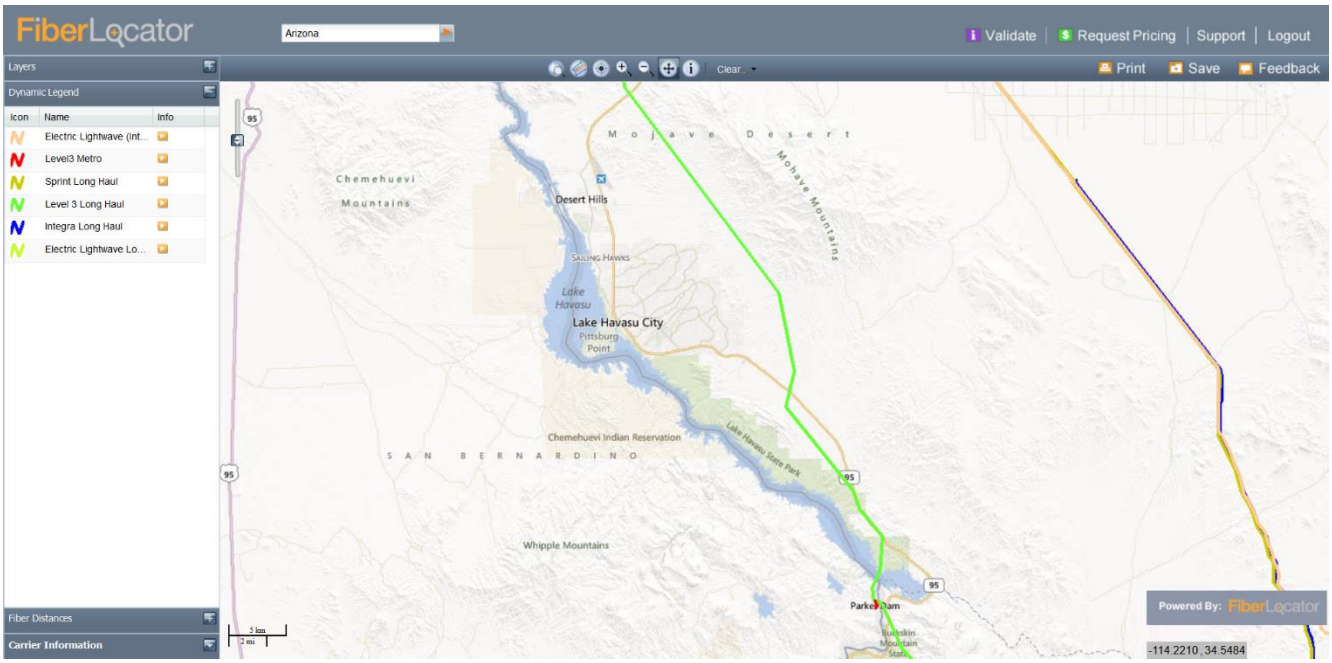
Boulder City Area Selective Fiber Maps

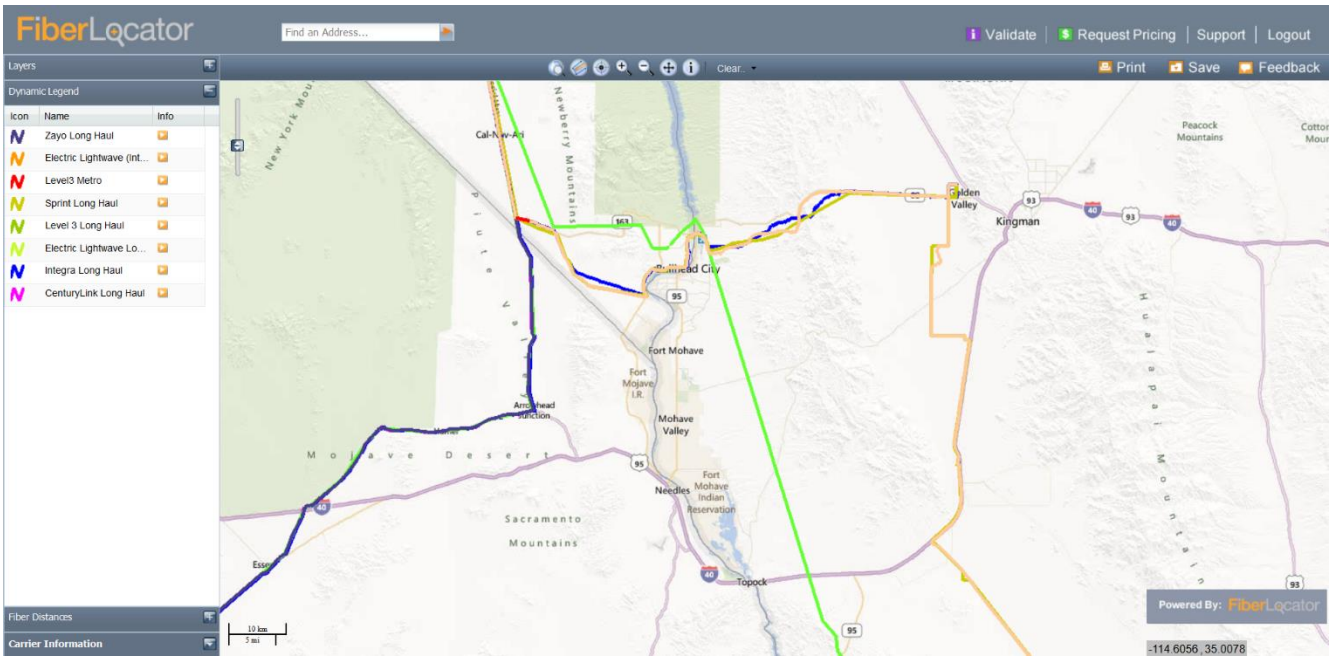


Lake Havasu City Area Selective Fiber Maps



Source: NEF FiberLocator (http://www.fiberlocator.com/)

Bullhead City-Kingman Area Selective Fiber Maps



Source: NEF FiberLocator (http://www.fiberlocator.com/)

Mohave County Broadband Coverage for Spring 2014

	Mohave County		State of Arizona	
All Broadband Tech (Except Satellite)	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	99.97%	99.94%	99.55%	99.56%
≥ 3 Mbps Down	97.42%	96.19%	98.80%	98.59%
≥ 6 Mbps Down	96.93%	95.44%	98.32%	98.19%
≥ 10 Mbps Down	91.17%	89.84%	97.70%	97.41%
DSL, xDSL & Other Copper Tech	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	90.34%	89.34%	93.65%	93.33%
≥ 3 Mbps Down	83.02%	81.67%	89.03%	88.29%
≥ 6 Mbps Down	67.60%	65.98%	82.36%	81.09%
≥ 10 Mbps Down	62.98%	61.56%	73.90%	72.46%
Cable Modem Technologies	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	77.58%	77.33%	89.25%	88.66%
≥ 3 Mbps Down	75.41%	75.12%	89.03%	88.41%
≥ 6 Mbps Down	73.68%	73.66%	88.95%	88.34%
≥ 10 Mbps Down	73.68%	73.66%	88.95%	88.34%
Fixed Wireless Technologies	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	90.71%	91.33%	94.68%	94.39%
≥ 3 Mbps Down	63.21%	60.40%	62.00%	62.87%
≥ 6 Mbps Down	63.04%	60.28%	53.70%	54.57%
≥ 10 Mbps Down	0.59%	0.47%	5.85%	5.85%
Mobile Wireless Technologies	**Population**	**Household**	**Population**	**Household**
≥ 768 Kbps Down	99.93%	99.91%	98.87%	99.01%
≥ 3 Mbps Down	96.23%	94.81%	97.46%	97.26%
≥ 6 Mbps Down	90.78%	89.40%	97.13%	96.79%
≥ 10 Mbps Down	99.93%	99.91%	97.13%	96.79%
	Population Count	**Household Count**	**Population Count**	**Household Count**
County Totals (2010 Census)	200,186	110,911	**6,392,017**	**2,844,526**

Notes: Data presented in table above is as collected by the State of Arizona for the NTIA and FCC broadband maps and submitted in Spring 2014 for Broadband Provider (BP) coverage declared as of 12/31/13. Population across Census Blocks and in proximity to Road Segments are based on calculations utilizing U.S. Census 2010 data.

Mohave County Broadband Providers (24)

Broadband Provider	Service Type	Advertised Download Speed	Advertised Upload Speed	Download Speed Tier	Upload Speed Tier
AT&T Mobility	Mobile Wireless	1.5 - 3 Mbps	768 Kbps - 1.5 Mbps	4	3
		3 - 6 Mbps	3 - 6 Mbps	5	5
		10 - 25 Mbps	3 - 6 Mbps	7	5
Baja Broadband	Cable	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
CommSpeed	Fixed Wireless	768 Kbps - 1.5 Mbps	768 Kbps - 1.5 Mbps	3	3
DataMax Wireless	Fixed Wireless	6 - 10 Mbps	1.5 - 3 Mbps	6	4
Fort Mojave Telecom	DSL (Asymmetric)	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
Frontier Citizens Utilities Rural	DSL (Asymmetric)	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
		768 Kbps - 1.5 Mbps	768 Kbps - 1.5 Mbps	3	3
		1.5 - 3 Mbps	200 - 768 Kbps	4	2
		1.5 - 3 Mbps	768 Kbps - 1.5 Mbps	4	3
		3 - 6 Mbps	200 - 768 Kbps	5	2
		3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
		6 - 10 Mbps	200 - 768 Kbps	6	2
		6 - 10 Mbps	768 Kbps - 1.5 Mbps	6	3
		10 - 25 Mbps	1.5 - 3 Mbps	7	4
		25 - 50 Mbps	3 - 6 Mbps	8	5
Frontier Southwest	DSL (Asymmetric)	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
Golden Valley	Cable	3 - 6 Mbps	200 - 768 Kbps	5	2
Greenfield Communications	Fiber	6 - 10 Mbps	1.5 - 3 Mbps	6	4
HNS (Hughes, Echostar)	Satellite	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
Infowest	Fixed Wireless	10 - 25 Mbps	3 - 6 Mbps	7	5
Leap Wireless (Cricket)	Mobile Wireless	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
NPG Cable (Suddenlink)	Cable	3 - 6 Mbps	200 - 768 Kbps	5	2
		10 - 25 Mbps	1.5 - 3 Mbps	7	4
		25 - 50 Mbps	1.5 - 3 Mbps	8	4
		50 - 100 Mbps	3 - 6 Mbps	9	5

Mohave County Broadband Providers (Continued)

Broadband Provider	Service Type	Advertised Download Speed	Advertised Upload Speed	Download Speed Tier	Upload Speed Tier
Rio Virgin Telephone (Reliance Connects)	DSL (Asymmetric)	10 - 25 Mbps	768 Kbps - 1.5 Mbps	7	3
	Fiber	50 - 100 Mbps	50 - 100 Mbps	9	9
Skycasters (VSAT Systems)	Satellite	6 - 10 Mbps	1.5 - 3 Mbps	6	4
South Central Utah Telephone Association	DSL (Asymmetric)	10 - 25 Mbps	1.5 - 3 Mbps	7	4
Sprint Communications	Mobile Wireless	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
StarBand Communications	Satellite	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
Table Top Telephone	DSL (Asymmetric)	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
T-Mobile	Mobile Wireless	1.5 - 3 Mbps	200 - 768 Kbps	4	2
		6 - 10 Mbps	1.5 - 3 Mbps	6	4
Transworld Network	Fixed Wireless	3 - 6 Mbps	1.5 - 3 Mbps	5	4
Verizon Communications	Mobile Wireless	768 Kbps - 1.5 Mbps	200 - 768 Kbps	3	2
ViaSat	Satellite	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3
Xpressweb Internet	Fixed Wireless	3 - 6 Mbps	768 Kbps - 1.5 Mbps	5	3

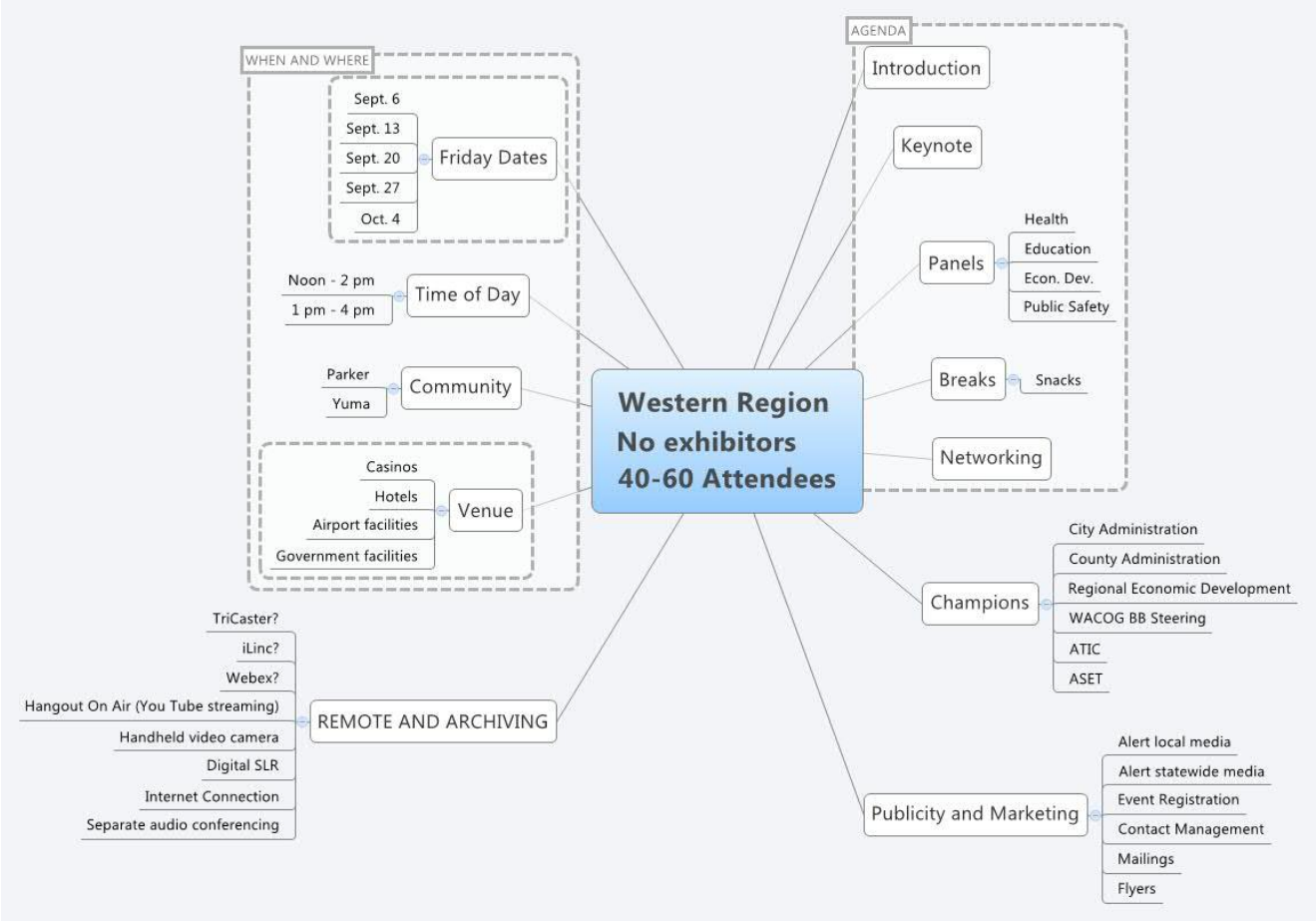
WACOG Broadband BCA Round 2

ATIC-WACOG Rural Broadband Summit

The **WACOG Broadband Steering Committee** in conjunction with the **Arizona Telecommunications and Information Council (ATIC - http://arizonatele.com/)** held the **ATIC-WACOG Rural Broadband Summit** on Thursday, March 6, 2014 from 11:00 AM to 2:30 PM at the Yuma County Main Library and the WACOG Kingman Office, with remote desktop viewers participating from around the region and the State. Lunch and refreshments were catered in to the Yuma and Kingman sites. There were approximately 30 onsite attendees and another 30 remote participants. The program included USDA Rural Development and focus on education, telehealth, and public safety broadband application areas.

ASET provided funding to ATIC through the NTIA broadband planning grant for the production of four anticipated half-day Rural Broadband Summits around the State. A mind map illustration from the summit planning process illustrating planning concerns, relationships, and logistics is included below (but doesn't reflect final arrangements). The event flier and program details can be found on the following page.

ATIC-WACOG Rural Broadband Summit Preliminary Planning



ATIC-WACOG Rural Broadband Summit Invitation

Thursday, March 6, 2014 from 11:00 am - 3:00 pm

At the Yuma County Public Library, WACOG Kingman Office, And the Convenience of Your Desktop (Remote)

For all broadband stakeholders in Western Arizona and across the State. Do you need a better internet? Do you want the latest insights and best practices in economic development, educational technology, telehealth, and public safety? Please plan to join us onsite (Yuma or Kingman) or from the convenience of your desktop at no charge. A lunch buffet will be provided onsite. Our treat. But please register here for either onsite or remote attendance: http://azdigitalfuture.org/civicrm/event/info?id=3&reset=1

ATIC-WACOG Rural Broadband Conference Agenda:

- **11:00-11:30 AM - Sign In, Get Lunch, Network, Settle In**
- **11:30-11:50 AM - Welcome from Mike Whipple, ATIC Chairman & Brian Babiars, WACOG Executive Director, Brief Attendee Introductions**
- **11:50 AM-12:20 PM - Alan Stephens, State Director for Rural Development, U.S. Department of Agriculture on USDA Assistance and Grant Opportunities Going Forward**
- **12:20-1:05 PM - Educational Technology Panel**
  - **Moderated by Tom Tyree, Yuma County Public School Superintendent**
  - **Christopher Johnson, Ed Tech Professor, U or A & Arizona Technology in Education Association (AZTEA)**
  - **Mike Whipple, ATIC Chairman on Arizona Educational Broadband Outlook**
- **1:05-1:20 PM - Break for Refreshments & Networking**
- **1:20-1:40 PM - Michael Britt, ADOA FirstNet on Public Safety Broadband Outlook**
- **1:40-2:20 PM - Telehealth in Arizona: Background, U of A Programs, Notable Initiatives**
  - **Janet Major, U of A Arizona Telemedicine Program**
- **2:20-2:40 PM - Mark Goldstein, President, International Research Center on WACOG Round 2 Focus Areas and Project Outlook**
- **2:40-3:00 PM - General Discussion & Wrap Up**

You can attend on-site at the **Yuma Main Public Library** (2951 S. 21st Dr., Yuma, AZ 85364) or the **WACOG Kingman Office** (208 N 4th St., Kingman, AZ 86401) at no charge with lunch and networking, but please register at the link http://azdigitalfuture.org/civicrm/event/info?id=3&reset=1. If you can't attend in person and would like to participate remotely, please also register and then use the following information to follow along via telephone and web conferencing:

- Audio: Dial 866-789-8818 and then use ID 968487#
- Web Conferencing (via iLinc): Browse to http://goo.gl/H3QAEB and click the Join button next to the ATIC session name.

*This event is produced by the **Arizona Telecommunications and Information Council (ATIC - http://arizonatele.com/)**, with funding from the **Arizona Strategic Enterprise Technology Office (ASET - http://aset.azdoa.gov/)**. Your image and voice may be recorded. We welcome participation by all interested parties.*

WACOG Broadband BCA Round 2

WACOG Broadband Steering Committee Participants

Western Arizona Council of Governments (WACOG):

- Brian Babiars, Executive Director, Western Arizona Council of Governments (WACOG - http://www.wacog.com/)
- Andrew C. Phelan III, Finance Director, Western Arizona Council of Governments (WACOG - http://www.wacog.com/)

WACOG Broadband Steering Committee Support Resources:

- Mark Goldstein, President & IRC Consulting Team Leader, International Research Center (IRC - http://www.researchedge.com/)
- Oris Friesen, Senior Project Consultant, International Research Center (IRC - http://www.researchedge.com/)
- Brad Zerbe, ASET/ATII Project Consultant, B2G Solutions (http://b2g-solutions.com/)

WACOG Economic Development Stakeholders:

- Julie Engel, President/CEO, Greater Yuma Economic Development Corporation (GYEDC - http://www.greateryuma.org/)
- Greg LaVann, Sr. Project Manager, Greater Yuma Economic Development Corporation (GYEDC - http://www.greateryuma.org/)
- Alison Morey, Project Manager Great Yuma Development Corporation (GYEDC - http://www.greateryuma.org/)
- Paul Melcher, Deputy County Administrator, Yuma County (http://www.co.yuma.az.us/)
- Vincent (Skip) Becker, President / CEO, La Paz Economic Development Corporation (http://www.lapazedc.com/)
- D.L. Wilson, Supervisor, La Paz County (http://www.co.la-paz.az.us/) & APS
- Bennett Bratley, Acting Director & Economic Development Specialist, Mohave County Economic Development Department (EDD - http://www.mohavedevelopment.org/)
- Alan Pruitt, Economic Development Director, Western Arizona Economic Development District (WAEDD - http://www.waedd.org/)
- Mike Ivers, President/CEO, Yuma Community Food Bank (http://www.yumafoodbank.org/)
- Elizabeth Carpenter, Mesa Del Sol Realty, LTD (http://www.homesinyuma.com/mlssearch.html)
- Bob Riley, Director of Economic Development, Kingman Airport Authority, Inc. (http://www.kingmanairportauthority.com/)
- Trudy Schuett, Chair for Regional Council on Aging (RCOA) for Western AZ (http://www.wacog.com/regional_council.html)
- Lisa Reilly, Yuma Sun (http://www.yumasun.com)

WACOG Educational Technology and Libraries Stakeholders:

- Tom Tyree, County School Superintendent, Yuma County School Superintendent's Office (http://www.co.yuma.az.us/index.aspx?page=326), Yuma County Schools - http://www.co.yuma.az.us/index.aspx?page=333
- Dean Farar, Director of Technology, Yuma Educational Technology Consortium (YETC) (http://www.yumaed.org/)
- Janice Shelton, County School Superintendent, La Paz County Education Service Agency (http://www.lapazschools.org/)
- Pat Koury, Superintendent, Hyder School District, Governing body of Dateland Elementary School (http://www.hyderschools.org/)
- Michael D. File, Mohave County School Superintendent, (http://www.mohavecounty.us/ContentPage.aspx?id=130), Mohave County Educational Service Center (MCESC - http://www.mcss.k12.az.us/)
- Andy Kong, IT Director, Carpe Diem Collegiate HS & MS (http://carpediemschools.com/), Desert View Academy
- Brenda Warnock, Interim Director of Technology Support Services, Arizona Western College (La Paz & Yuma Counties, http://www.azwestern.edu/), Technology & Network Services Department (TANS) (http://www.azwestern.edu/information_technology/tss.html)
- Chad Coleman, Interim Director of Computer Information Systems, Arizona Western College (La Paz & Yuma Counties, http://www.azwestern.edu/)
- Ted McKever, Chief Information Officer (CIO), Information Technology, Mohave Community College (MCC - http://www.mohave.edu/) (Still in role?)
- Ruthie Davis, Library Manager, Parker Public Library (http://www.parkerpubliclibraryaz.org/)

WACOG Transportation Stakeholders:

- Craig Raborn, Transportation Planner, Western Arizona Council of Governments (WACOG - http://www.wacog.com/, http://www.wacog.com/transportation_services.html)
- Charles Gutierrez, Associate Transportation Planner II/Traffic Data Management Supervisor, Yuma Metropolitan Planning Organization (YMPO - http://ympo.org/)
- Mark Hoffman, ADOT Project Manager & YMPO Technical Advisory Committee (TAC), Arizona Department of Transportation (ADOT - http://www.azdot.gov/)
- Craig Williams, Airport Director, Yuma County Airport Authority (http://www.yumaairport.com/)
- Gen Grosse, Corporate Account Manager, Yuma County Airport Authority (http://www.yumaairport.com/)
- Jason Frost, Chief Technology Officer (CTO), Yuma County Airport Authority (http://www.yumaairport.com/)

WACOG Government IT Stakeholders:

- Ed Jin, Chief Information Officer (CIO), Information Technology Services Department, Yuma County (http://www.co.yuma.az.us/index.aspx?page=398)
- John Settles, Acting Department Head, Information Technology, La Paz County (http://co.la-paz.az.us/)
- Nathan McDaniel, Director, Information Technology Department, Mohave County (http://www.mohavecounty.us/ContentPage.aspx?id=121)
- Michael Davis, IT Specialist, Western Arizona Council of Governments (WACOG - http://www.wacog.com/)

WACOG Healthcare Stakeholders:

- Shaunna Ruis, Director of Business Services, Sunset Community Health Center (http://www.sunset-chc.org)
- Vickie Clark, CEO, La Paz Regional Hospital (http://lapazhospital.org/)
- Melanie Sarino, MPH, Epidemiologist/Healthy La Paz Project Manager, La Paz County Health Department, Public Health Emergency Response & Preparedness Division (https://www.facebook.com/LaPazCounty.HealthDepartment)
- Katie Turnbow, Assistant Emergency Preparedness Coordinator, Public Information Officer, Exercise Coordinator, La Paz County Health Department, Public Health Emergency Response & Preparedness Division (https://www.facebook.com/LaPazCounty.HealthDepartment)
- Bob Sarnecki, Chief Information Officer (CIO), Kingman Regional Medical Center (KRMC - http://www.azkrmc.com/)

WACOG Public Safety Stakeholders:

- Michael Britt, FirstNet Program Manager, Arizona Department of Administration (ADOA) Arizona Strategic Enterprise Technology Office (ASET) (http://aset.azdoa.gov/ & https://azfirstnet.az.gov/)
- Chris Chambers, Chief, Buckskin (Parker) Fire Department (http://www.buckskinfiredepartment.com/)
- Leon Wilmot, Yuma County Sheriff, Yuma County Sheriff's Office (http://yumacountysheriff.org/)
- John C. Drum, La Paz County Sheriff, La Paz County Sheriff's Office (http://www.lapazsheriff.org/)
- Tom Sheahan, Mohave County Sheriff, Mohave County Sheriff's Office (http://www.mohavecounty.us/ContentPage.aspx?id=131)